2024 Regional Career Trends

For Career and Technical Education
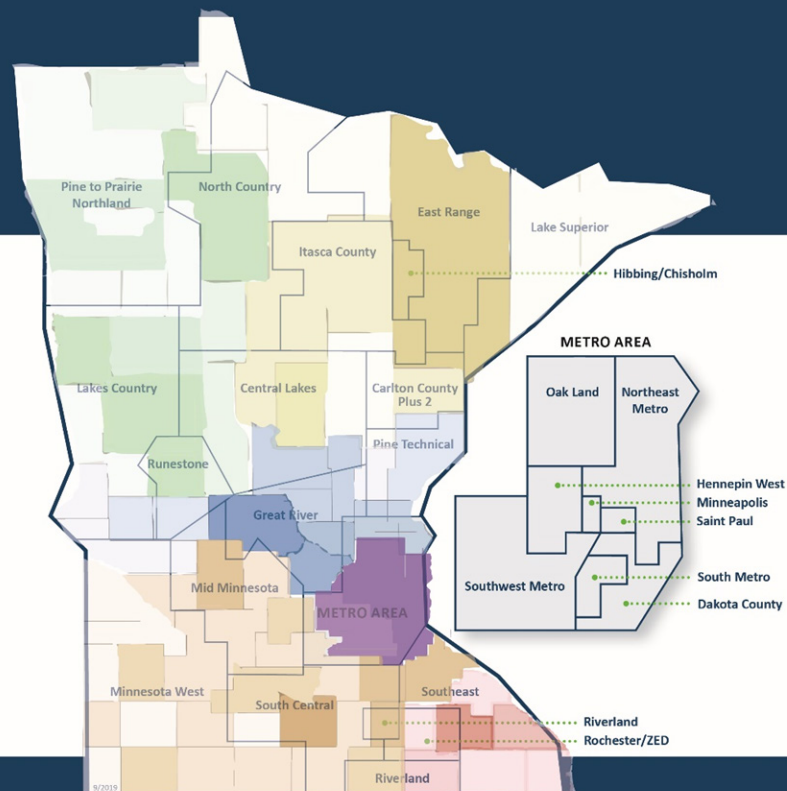
RealTime Talent

Southwest

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Overview

Minnesota's workforce landscape is undergoing a dramatic transformation, shaped by a confluence of demographic shifts, technological advancements, and evolving economic needs. As Baby Boomers retire and younger generations enter the labor market, employers are facing an urgent demand for skilled workers across industries ranging from healthcare and manufacturing to tech and green energy. At the same time, the rise of automation and remote work is redefining traditional job roles, prompting businesses to rethink recruitment strategies and workforce development. In this dynamic environment, Minnesota must navigate the challenges of upskilling its existing workforce, ensuring young people have access to well-paying local careers, and attracting new talent to ensure long-term economic growth and resilience.

The local job market remains strong in Minnesota, with a variety of high-quality career opportunities available in every career field. As of October 2024, Minnesota's unemployment rate remained at 3.4% for the fourth consecutive month, with labor force participation also holding steady at 67.7%. The state continues to have more available jobs than jobseekers—about 75 jobseekers for every 100 jobs. Although the job market has changed dramatically since 2018 or 2020, Minnesota is still experiencing significant talent shortages plaguing every industry and career cluster.

This report details the current workforce landscape of Minnesota and the regional nuances of talent demand by career field. The content is intended to support Minnesota Perkins Consortia in navigating changes in their local labor market and guide their understanding of how these changes may impact enrollment, industry, career advancement, and the needed programs of study by region.[1] Each report includes:

- Regional economic and demographic overview
- Career field analysis including regional importance of each sector, key labor market statistics, and forecasting for future demand and talent shortages in the six career fields:
    - Health Science Technology
    - Human Services
    - Arts, Communications, and Information Systems
    - Business, Management, and Administration
    - Engineering, Manufacturing, and Technology
    - Agriculture, Food, and Natural Resources
- An Origin-to-Gateway-to-Target model analysis for how to help move students from entry points into their field of interest into other aligned careers

About This Report

This report was developed by RealTime Talent for the Career and Technical Education Consortia of Minnesota with funding provided by Minnesota State. The contents of this publication were made possible through the Strengthening Career and Technical Education for the 21st Century Act (Perkins V) Federal grant from the United States Department of Education administered through Minnesota State Colleges and Universities.

Table of Contents

Southwest Minnesota

Introduction

This report examines the current and future talent needs across the nineteen counties of Southwest Minnesota.[2] Beginning with an analysis of local demographics, unique opportunities, and the key industries driving the regional economy, this macroeconomic overview is designed to help educators and administrators align educational programs with the evolving needs of local businesses. By grouping regional careers by wage, skill requirements, and demand, the report aims to guide the education community in anticipating future workforce demands and ensuring that curricula are tailored to prepare students for relevant career opportunities in the region.

This series has been developed in partnership with Minnesota State through the Strengthening Career and Technical Education for the 21st Century Act (Perkins V) annually since 2020. The 2024 iteration of this report has shifted from a definition of "high-wage" aligned to average (mean) wages to one which more closely aligns to Minnesota's official definition, "occupations that have an annual median salary higher than the area's composite median salary of all occupations." For more information on this and other Career and Technical Education (CTE) definitions, please refer to Minnesota's Perkins Glossary.[3]

This report uses an Origin-to-Gateway-to-Target Occupation model, used by the Rework America Alliance and modified in this report by RealTime Talent, and illustrates promising likely and aligned pathways into each career field. This model supports students looking for entry points from an initial occupation of interest into other aligned careers, considering automation, remote work, and the changing work environment. The model is shown below, along with the definitions of each grouping of occupations.

Origin-to-Gateway-to-Target (OGT) Model

Target Occupations
High wage (above regional median)
High skill (require some credential)
High demand (2/4 indicators: under 3% unempl, higher than average 5-year growth, total 5-year demand >50% of current empl, high job posting volume)
*often also high occupation gap and award gap

Gateway Occupations
Mid wage ($45,000 – regional median)
Low-middle skills (HS diploma, some OJT)
Sufficient demand (3-5% unemployment and/or high volumes of current opportunities)

Origin Occupations
Low wage (<$45,000/year)
Low skill (no credential)
Varied demand (may have over 5% unemployment, low growth, low replacement demand, and/or low job postings)

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[2]Blue Earth, Brown, Chippewa, Cottonwood, Faribault, Freeborn, Goodhue, Jackson, Kandiyohi, Lac Qui Parle, Le Sueur, Lincoln, Lyon, McLeod, Martin, Meeker, Murray, Nicollet, Nobles, Pipestone, Redwood, Renville, Rice, Rock, Sibley, Steele, Waseca, Watonwan, and Yellow Medicine Counties.
[3] Perkins Glossary. Section 14. Accessed November 30, 2024 at https://www.minnstate.edu/system/cte/operational-guide/section-14-glossary.html

Origin Occupations are roles that are low-wage (<$45,000 median annual wages), typically do not require a postsecondary credential, and may or may not be in high demand.

Gateway Occupations are good jobs that can lead to Target Occupations as skills and experience are developed. These typically offer between $45,000 up to the regional median wage ($48,900 in the Southwest). Gateway occupations offer a wage uplift to those previously employed in Origin Occupations and offer longer-term economic mobility and career advancement opportunities. These are most often best suited for adult workforce programming and first postsecondary experiences.

Target Occupations refer to high-wage occupations that pay at or above the region's median wage ($48,900 in the Southwest). These positions are also high-skill—meaning that they require an industry credential, certification, or higher education—and high-demand. Many of these Target Occupations are also facing Opportunity Gaps and Award Gaps locally, labeled below as "OG" and "AG" respectively.

Community Profile
Demographics

POPULATION
- Total population in Southwest Minnesota: 684,705
  - Change from prior year: +1,003 people
  - Share of Minnesota's total population who live in the Southwest: 12%
- Largest local concentrations of population: Mankato, Faribault-Northfield, Owatonna
- Most populous county: Blue Earth County (10% of the region's population)
- Median age: 39.8 years
  - Comparison to statewide median (38.5 years): 1.3 years older
  - Minors under 18 years of age are 22.8% of Southwest Minnesota's population, on par with the statewide rate of 23.0%

Resident Population of Southwest Minnesota
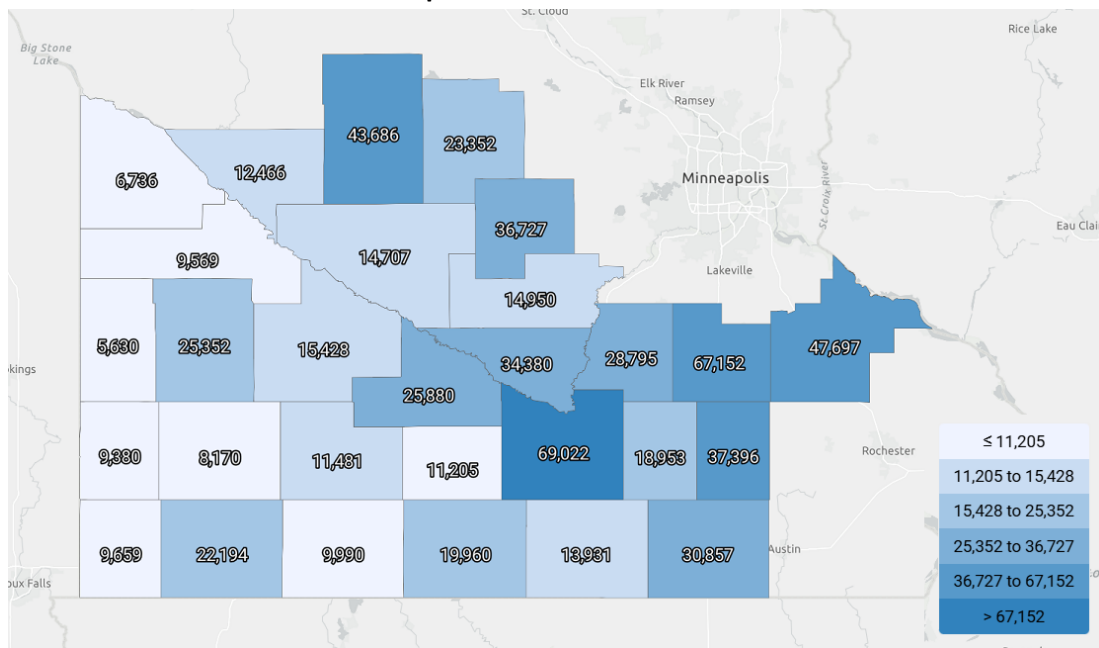
American Community Survey 2018-2022.

RACE AND ETHNICITY
Southwest Minnesota is home to residents of many racial and ethnic backgrounds, though 87.9% of residents are white.
- 12.1% of residents are Black, Asian, American Indian, Native Hawaiian, two or more race(s), or some other race other than white (BIPOC), while 7.9% are of Hispanic/Latine ethnicity
- The Southwest region has an 8.2 percentage point higher share of white residents than the state as a whole
- Southwest Minnesota has a higher share of Hispanic/Latine residents than the other regions, with 54,041 Hispanic/Latine residents, or 7.9% (vs. 5.7% statewide)

o The Fairbault-Northfield μSA has a higher share of Black or African American Residents than other cities in the Southwest region, at 6.3%, and is generally more diverse than the other most populous areas of the region, with 17.5% of residents identifying as BIPOC

Race and Ethnicity Summary Info

Geography	% BIPOC by Race	% white by Race	% Hispanic/ Latine Ethnicity
Mankato	12.0%	88.0%	4.4%
Faribault-Northfield	17.5%	82.5%	8.7%
Owatonna	11.9%	88.1%	8.3%
Southwest	**12.1%**	**87.9%**	**7.9%**
Minnesota	**20.3%**	**79.7%**	**5.7%**

American Community Survey 2018-2022
BIPOC residents are those who identify as Black, Asian, American Indian, Native Hawaiian, two or more races, or some other race other than white
Hispanic/Latine ethnicity is reported separately from race in the American Community Survey

Population Race of BIPOC Residents, All Ages
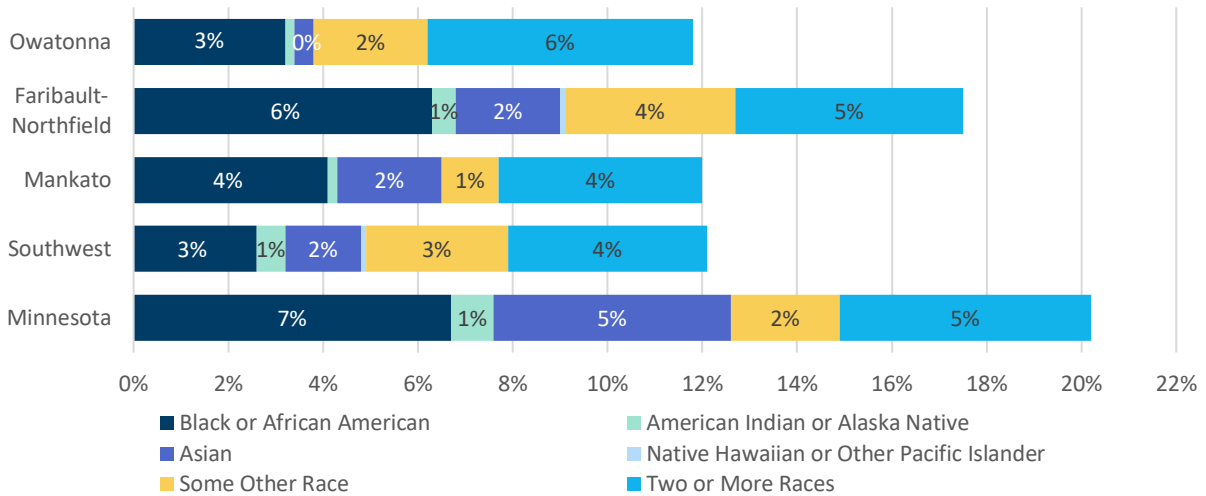
American Community Survey 2018-2022.

Population Hispanic/Latine Ethnicity, All Ages

American Community Survey 2018-2022.

Detailed Community Demographics

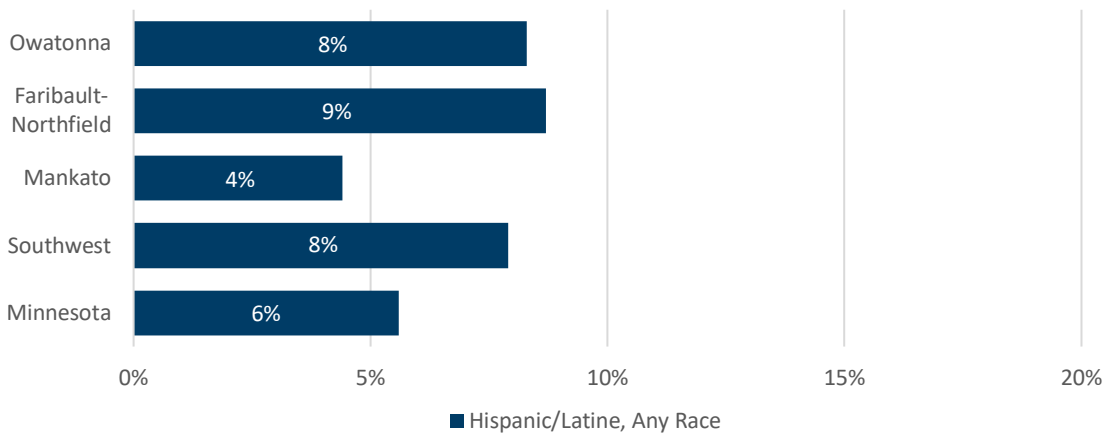| Demographics	Metro Area			Region			Region (Value)		
	Mankato, MN MSA	Faribault-Northfield, MN μSA	Owatonna, MN μSA	Southwest Minnesota	Minnesota	USA	Southwest Minnesota	Minnesota	USA
Population (ACS)	—	—	—	—	—	—	684,705	5,695,292	331,097,593
Male	50.6%	51.4%	50.3%	50.5%	50.2%	49.6%	345,926	2,857,964	164,200,298
Female	49.4%	48.6%	49.7%	49.5%	49.8%	50.4%	338,779	2,837,328	166,897,295
Median Age[2]	—	—	—	—	—	—	39.8	38.5	38.5
Under 18 Years	20.3%	21.5%	24.5%	22.8%	23.0%	22.1%	156,234	1,307,084	73,213,705
18 to 24 Years	18.9%	14.5%	8.0%	10.2%	9.0%	9.4%	69,619	513,816	31,282,896
25 to 34 Years	12.7%	11.4%	11.1%	11.2%	13.2%	13.7%	77,023	751,997	45,388,153
35 to 44 Years	12.0%	12.3%	12.6%	11.9%	13.2%	12.9%	81,694	751,128	42,810,359
45 to 54 Years	9.9%	11.5%	12.0%	11.1%	11.9%	12.4%	76,268	675,835	41,087,357
55 to 64 Years	10.9%	12.6%	13.4%	13.6%	13.3%	12.9%	93,139	756,036	42,577,475
65 to 74 Years	8.6%	9.6%	10.3%	10.6%	9.7%	9.7%	72,314	550,838	32,260,679
75 Years, and Over	6.7%	6.6%	8.1%	8.5%	6.8%	6.8%	58,414	388,558	22,476,969
Race: White	88.0%	82.5%	88.1%	87.9%	79.7%	65.9%	602,097	4,537,219	218,123,424
Race: Black or African American	4.1%	6.3%	3.2%	2.6%	6.7%	12.5%	17,778	382,082	41,288,572
Race: American Indian and Alaska Native	0.2%	0.5%	0.2%	0.6%	0.9%	0.8%	4,063	51,434	2,786,431
Race: Asian	2.2%	2.2%	0.4%	1.6%	5.0%	5.8%	10,819	286,146	19,112,979
Race: Native Hawaiian and Other Pacific Islander	0.0%	0.1%	0.0%	0.1%	0.0%	0.2%	470	2,324	624,863
Race: Some Other Race	1.2%	3.6%	2.4%	3.0%	2.3%	6.0%	20,693	133,098	20,018,544
Race: Two or More Races	4.3%	4.8%	5.6%	4.2%	5.3%	8.8%	28,785	302,989	29,142,780
Hispanic or Latino (of any race)	4.4%	8.7%	8.3%	7.9%	5.7%	18.7%	54,041	327,049	61,755,866

American Community Survey 2018-2022.

Economic and Social Characteristics

LABOR FORCE PARTICIPATION

- Civilian labor force: 362,317 workers (a slight decrease from the prior year)
- Labor force participation rate: 66.3%
  - This lags Minnesota's statewide rate by nearly 2.4 percentage points
- Participation rate for the prime working-age population (ages 25 to 54): 87.4%.
  - This lags the statewide rate of 88.4%

Labor Force Participation Rate

	In Labor Force	Not in Labor Force
16+ Population	66%	34%
Prime-Age (civilian population 25-54)	87%	13%
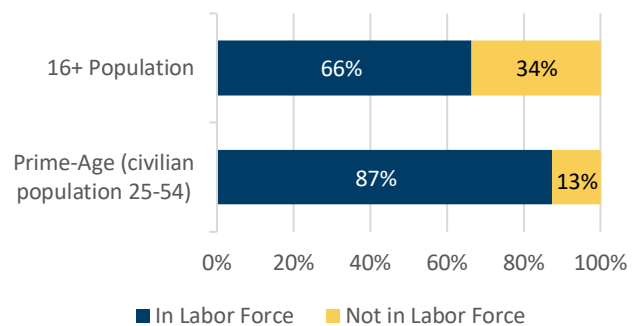
American Community Survey 2018-2022.

SOCIAL CHARACTERISTICS

- The Southwest region has similar percentage of veterans, children living in single parent families, and people with disabilities as compared to the statewide average:
  - Veterans are 3.7% of the regional population vs. 3.5% statewide
  - Children living in single parent families are 28.8% of the population vs. 28.3% statewide
  - People with disabilities are 9.4% in the region vs. 9.2% statewide
- Labor force participation for those groups is mixed in the Southwest region as compared to statewide:
  - Veteran labor force participation in the region is 81.7% vs. 81.1% for Minnesota
  - Labor force participation rate for people with disabilities is 54.0% in the region vs. 54.4% statewide
- The Southwest region's share of disconnected youth is similar to the statewide average:
  - 1.5% in the Southwest vs. 1.7% statewide
- Disconnected youth rates vary between communities:
  - Northfield-Faribault: only 0.1% of youth are disconnected
  - Mankato: 1.5% of youth are disconnected

Detailed Economic and Social Characteristics

Characteristic	Metro Area			Region			Region (Value)		
	Mankato, MN MSA	Faribault-Northfield, MN µSA	Owatonna, MN µSA	Southwest Minnesota	Minnesota	USA	Southwest Minnesota	Minnesota	USA
Labor Force Participation Rate and Size (civilian population 16 years and over)	70.8%	64.2%	67.8%	66.3%	68.7%	63.3%	362,317	3,112,649	167,857,207
Prime-Age Labor Force Participation Rate and Size (civilian population 25-54)	89.2%	82.2%	89.4%	87.4%	88.4%	82.8%	205,186	1,924,211	106,380,520
Armed Forces Labor Force	0.1%	0.1%	0.0%	0.0%	0.1%	0.5%	247	4,104	1,236,378
Veterans, Age 18-64	3.1%	4.0%	4.0%	3.7%	3.5%	4.3%	14,584	119,296	8,636,019
Veterans Labor Force Participation Rate and Size, Age 18-64	84.6%	85.3%	83.1%	81.7%	81.1%	77.1%	11,916	96,710	6,656,238
Median Household Income[2]	—	—	—	—	—	—	$72,318	$84,313	$75,149
Per Capita Income	—	—	—	—	—	—	$36,900	$44,947	$41,261
Poverty Level (of all people)	14.4%	9.2%	8.5%	10.3%	9.3%	12.5%	67,734	516,284	40,521,584
Households Receiving Food Stamps/SNAP	7.5%	6.4%	6.8%	7.1%	7.4%	11.5%	19,253	167,713	14,486,880
Enrolled in Grade 12 (% of total population)	1.0%	1.3%	1.3%	1.4%	1.4%	1.4%	9,510	80,290	4,476,703
Disconnected Youth[3]	1.5%	0.1%	1.3%	1.5%	1.7%	2.5%	602	5,089	430,795
Children in Single Parent Families (% of all children)	30.8%	29.2%	28.0%	28.8%	28.3%	34.0%	43,297	355,832	23,568,955
Uninsured	3.6%	6.0%	3.7%	5.4%	4.6%	8.7%	36,254	260,483	28,315,092
With a Disability, Age 18-64	9.4%	7.7%	8.6%	9.4%	9.2%	10.5%	37,140	313,760	20,879,820
With a Disability, Age 18-64, Labor Force Participation Rate and Size	57.2%	49.9%	59.5%	54.0%	54.4%	45.5%	20,041	170,629	9,492,098
Foreign Born	5.2%	8.1%	4.6%	5.2%	8.5%	13.7%	35,294	481,922	45,281,071

American Community Survey 2018-2022.

*Median values for certain aggregate regions (such as MSAs) may be estimated as the weighted averages of the median values from the composing counties. **Disconnected Youth are 16-19 year olds who are (1) not in school, (2) not high school graduates, and (3) either unemployed or not in the labor force.

Education

EDUCATIONAL ATTAINMENT

- In Southwest Minnesota, 7.0% of adults aged 25-64 do not have a high school diploma or equivalent
- About 27.9% of adults aged 25-64 in the region have a high school diploma as their highest level of education (compared to 20.9% statewide)
- Educational attainment varies among metropolitan areas:
  - In Faribault-Northfield, 38.5% of adults have a high school diploma or less. In Owatonna, that share drops to 32.4%. In contrast, only 26.3% of Mankato's population has a high school diploma or less
  - Mankato has a greater share of its population with high levels of educational attainment, with 36.8 % having a bachelor's degree or higher, compared to 28.6% in Faribault-Northfield and 31.3% in Owatonna

Educational Attainment of Southwest Minnesota Residents, Age 25-64

Educational Attainment	Metro Area			Region			Region (Value)		
	Mankato, MN MSA	Faribault-Northfield, MN µSA	Owatonna, MN µSA	Southwest Minnesota	Minnesota	USA	Southwest Minnesota	Minnesota	USA
No High School Diploma	4.5%	7.8%	6.0%	7.0%	5.9%	10.1%	23,042	173,843	17,373,867
High School Graduate	21.8%	30.7%	26.4%	27.9%	20.9%	25.1%	91,493	614,415	43,176,248
Some College, No Degree	20.4%	19.9%	22.7%	22.5%	19.7%	19.7%	73,853	578,062	33,916,989
Associate degree	16.5%	12.9%	13.6%	15.9%	12.9%	9.2%	52,276	377,910	15,886,884
Bachelor's Degree	24.9%	18.9%	21.4%	18.7%	26.9%	22.4%	61,450	790,857	38,451,123
Postgraduate Degree	11.9%	9.7%	9.9%	7.9%	13.6%	13.4%	26,010	399,909	23,058,233

American Community Survey 2018-2022.

Educational Attainment, Age 25-64
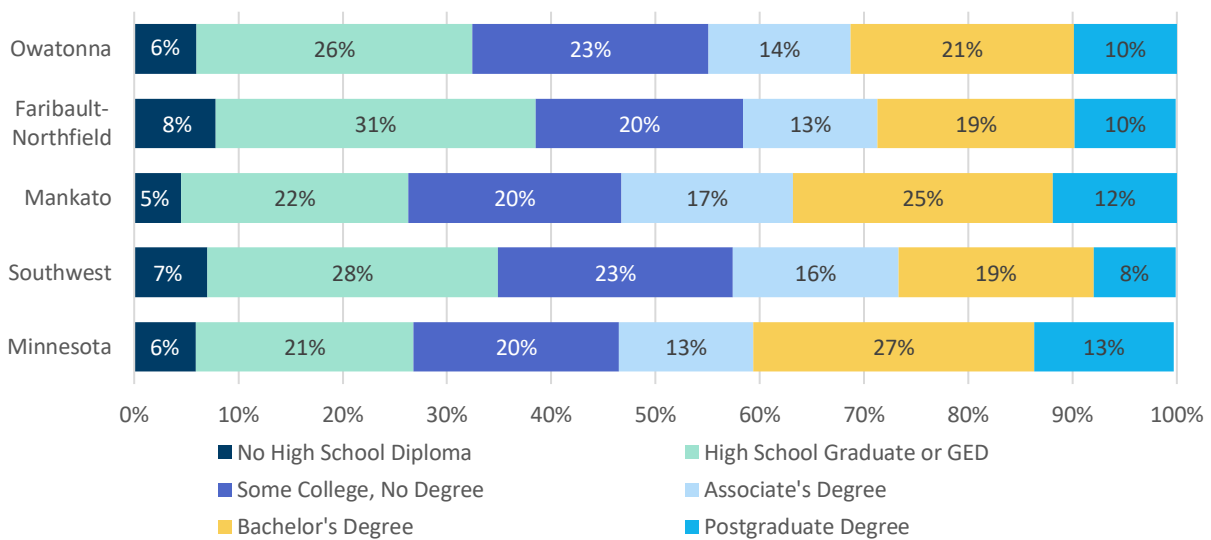
American Community Survey 2018-2022.

REGIONAL COLLEGES AND UNIVERSITIES

Southwest Minnesota has eleven institutions of higher education that offer both degree and non-degree awards, two-year degrees, four-year degrees, and graduate degrees. The table below shows these postsecondary institutions sorted by total awards conferred from all programs during SY2022-23. There were a total of 9,325 awards conferred in the region in SY2022-23, compared to 9,036 awards conferred in the region in SY2021-22.

Postsecondary Awards by Institution, School Year 2022-23

School	Certificate < 1 Yr	Certificate 1+ but < 2 Yr	Associate	Certificate 2+ but < 4 Yr	Bachelor's	Post-Bacc	Master's	Post Master's/ Doctorate	Total Awards	Total School Enrollment	Avg Net Price*
Minnesota State University-Mankato	161	0	71	0	2,704	215	606	85	3,842	14,590	$15,832
St Olaf College	0	0	0	0	926	0	0	0	926	3,046	$27,729
Ridgewater College	58	123	560	105	0	0	0	0	846	2,904	$11,014
Minnesota West Community and Technical College	340	176	237	19	0	0	0	0	772	3,352	$11,356
Gustavus Adolphus College	0	0	0	0	686	0	0	0	686	2,072	$27,657
Southwest Minnesota State University	11	0	20	0	456	14	161	12	674	6,930	$14,061
South Central College	114	71	379	37	0	0	0	0	601	2,602	$10,025
Carleton College	0	0	0	0	557	0	0	0	557	2,059	$31,718
Martin Luther College	59	1	0	3	174	0	17	0	254	880	$21,988
Bethany Lutheran College	0	8	0	0	129	0	7	0	144	830	$17,640
Avalon School of Cosmetology	8	15	0	0	0	0	0	0	23	26	$9,861
Total	**751**	**394**	**1,267**	**164**	**5,632**	**229**	**791**	**97**	**9,325**		

* Average net price represents full-time beginning undergraduate students who paid the in-state or in-district tuition rate and were awarded grant or scholarship aid from federal, state or local governments, or the institution. Data as of the 2022-2023 academic year.

Economy
Economic Indicators

GROSS DOMESTIC PRODUCT

Gross Domestic Product (GDP) is the total value of goods and services produced by a region. In 2023, nominal GDP in the Southwest region grew by 4.7%. This follows an expansion of 10.7% in 2022. As of 2023, total GDP in the region was $39,899,792,000—of which $7,038,129,000 is attributed to the Mankato MSA.

One-Year % Change in GDP, Southwest Minnesota

Gross Domestic Product data are provided by the Bureau of Economic Analysis, imputed by Chmura where necessary, updated through 2023
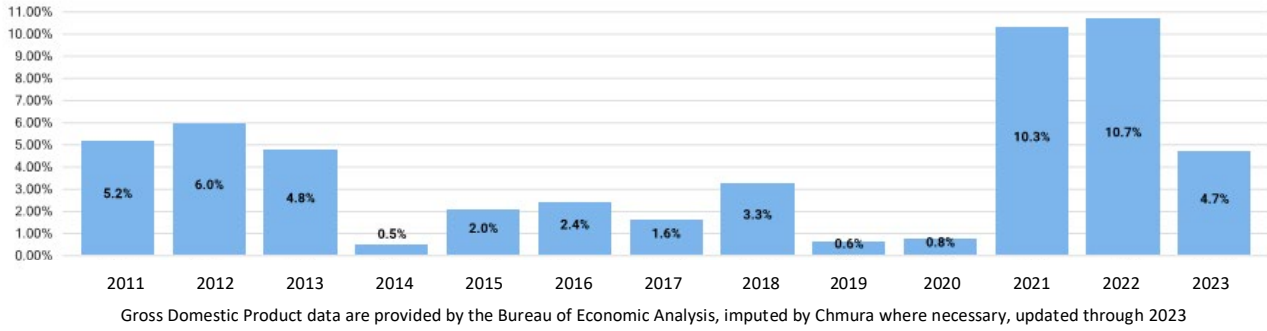
INDUSTRY CONTRIBUTIONS TO GDP

Top Industry Contributions to GDP (2023):

1. Manufacturing: $7.70 billion
2. Agriculture, Forestry, Fishing, and Hunting: $5.60 billion
3. Health Care and Social Assistance: $3.65 billion
4. Retail Trade: $2.92 billion
5. Real Estate and Rental and Leasing: $2.73 billion

Key Changes:

- The Top ten industries stayed consistent from 2022 to 2023 with the exception of Finance and Insurance which fell out of the top ten and was replaced by Transportation and Warehousing
- The majority of industries saw increased output, with the exception of Manufacturing, Agriculture, Forestry, Fishing, and Hunting, and Public Administration which all saw slight declines

Industry Contributions to GDP in Southwest Minnesota (in $ Millions), 2023
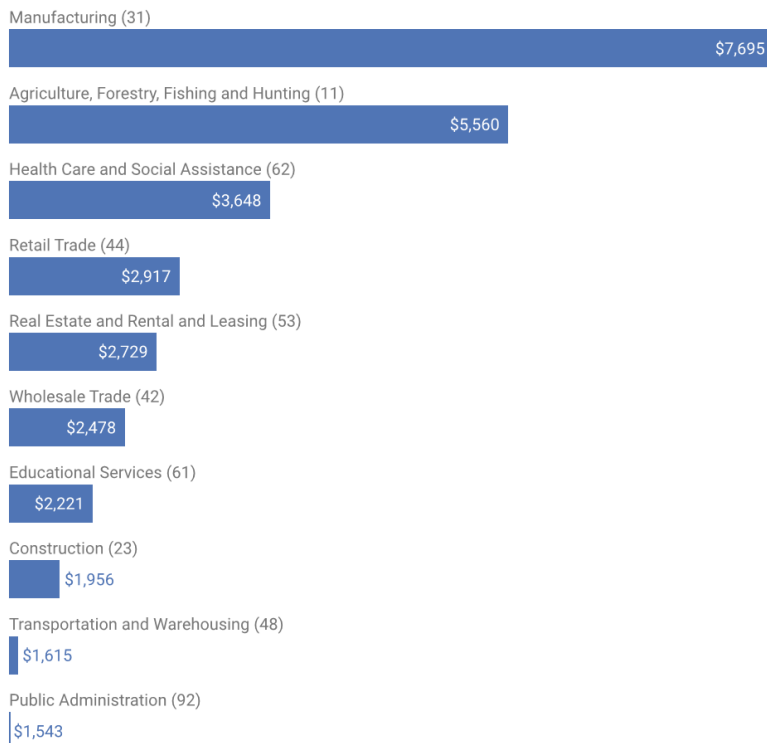
Gross Domestic Product data are provided by the Bureau of Economic Analysis, imputed by Chmura where necessary, updated through 2023.

Labor Market

UNEMPLOYMENT TRENDS

- The unemployment rate in Southwest Minnesota was 4.0% as of June 2024
    - The regional unemployment rate was slightly higher than the statewide rate (3.8%) and lower than the national rate (4.3%)
    - One year earlier, in June 2023, the unemployment rate in Southwest Minnesota was 3.3%.

Unemployment for Southwest Minnesota
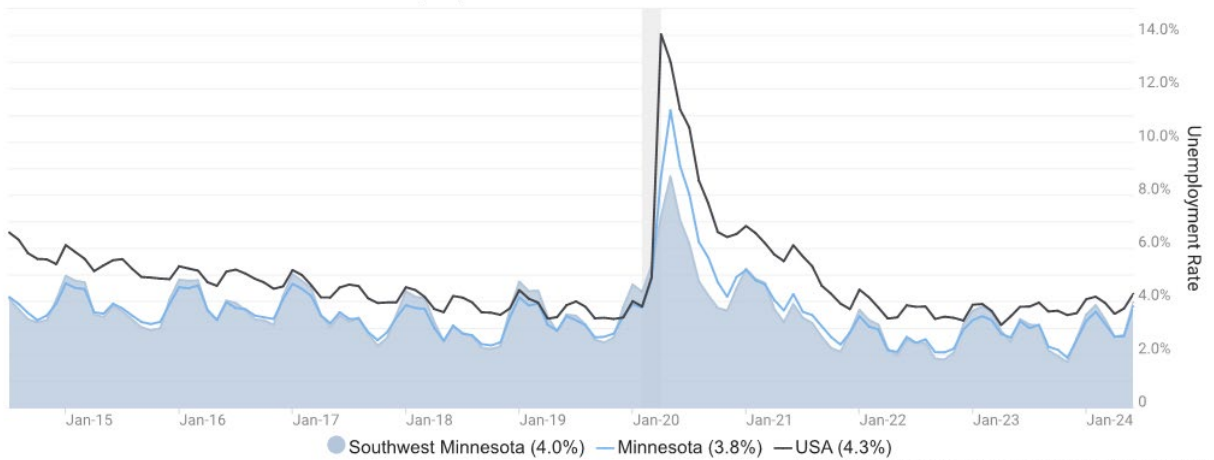
Unemployment rate data are from the Local Area Unemployment Statistics, provided by the Bureau of Labor Statistics and updated through June 2024.

WAGE TRENDS

- In Southwest Minnesota, average annual wages were $55,107 as of 2024Q1
    - This is an increase of 2.8% over the past four quarters.
- Nationwide, average annual wages were $70,857 as of 2024Q1
    - This represents an increase from $70,318 as of 2023Q2 and $67,777 in 2022Q2

Change in Average Annual Wages for Southwest Minnesota
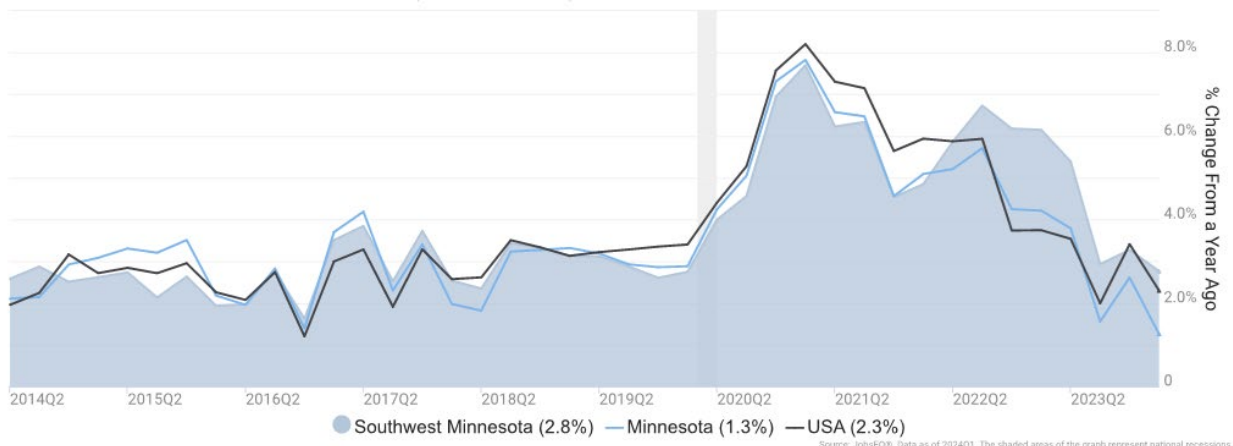
Annual average wages per worker data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2023Q4 with preliminary estimates updated to 2024Q1.

EMPLOYMENT TRENDS AND FORECAST

Employment rose by 0.7% in Southwest Minnesota between 2023Q1 and 2024Q1, growing more slowly than the prior 12 months. Employment in the region is forecast to decline by -0.5% on average annually through 2029Q1 in a baseline scenario.

5-Year Employment Forecast in Southwest Minnesota
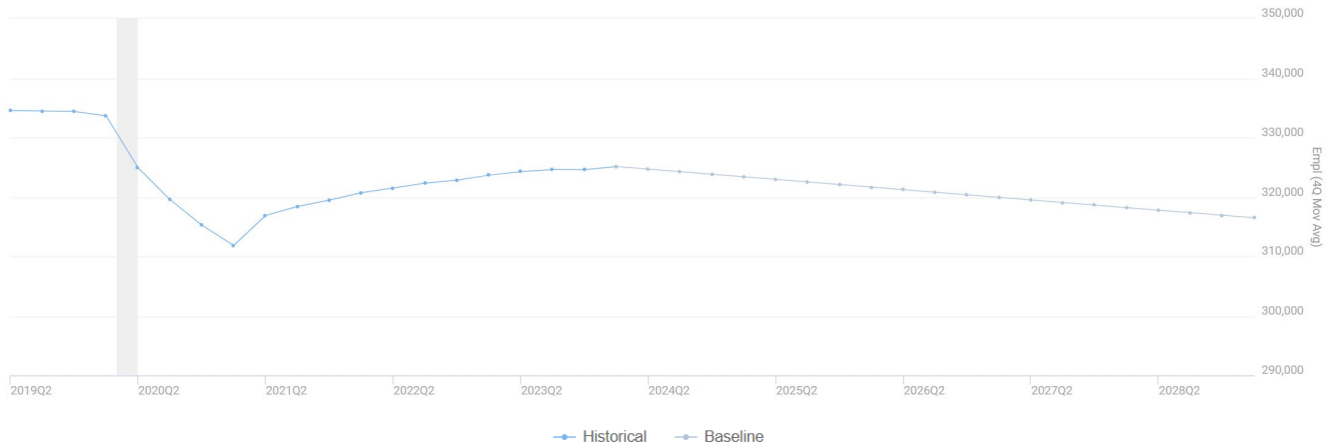
INDUSTRY CLUSTER FORECASTS

Employment forecasts vary considerably by industry. An industry cluster is a geographic concentration of interrelated industries or occupations. The chart below shows industry clusters employing talent in Southwest Minnesota. The larger the circle, the more concentrated the industry is in the region (compared to the national average); this is called a Location Quotient (LQ). Clusters are positioned on the chart based on their wages and forecast employment. Clusters higher up on the Y-axis of the chart have higher average wages, and clusters located further to the right on the X-axis of the chart have higher forecasted employment growth. In summary, large circles in the top-right corner of the chart would be considered high-wage, high-growth, uniquely important clusters for the region's economy. Smaller circles further to the bottom-left corner of the chart would be lower-wage, declining, underrepresented clusters.

The most highly concentrated cluster in the Southwest region is Agricultural:
- Location Quotient: 5.22 (up from 2023)
- Employment: 20,854 workers (down by ~441 from 2023)
- Average Wage: $92,518 (up by $10,218 from 2023)
- Employment Forecast: Projected to decline by 1.1% annually over the next 10 years

Industry Cluster Employment Forecast Trends:
- Electric/Electonics Manufacturing and Health are the only industry clusters projected to have positive average employment growth in the region; all others are forecast to shrink
- Industries were mixed in terms of change in forecasted employment from 2023Q2 to 2024Q1, with some like Health and Chemical improving, while others stayed flat or declined (Food Manufacturing and Consumer Services, respectively)

Industry Clusters for Southwest Minnesota as of 2024Q1
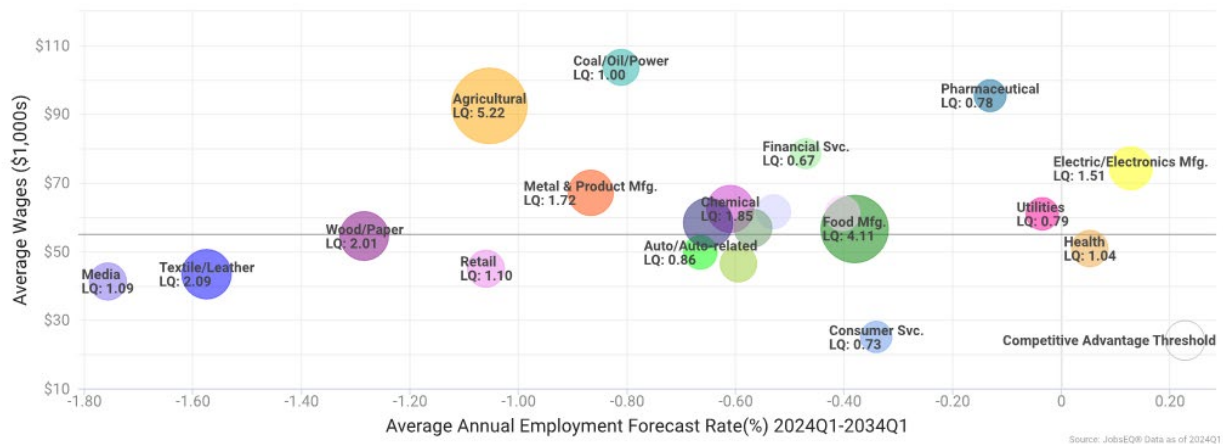
Quantifying Talent Shortages

Occupation Gaps

The chart below shows the potential average annual talent gaps by occupation in the Southwest region over the next ten years. This summary estimate is based on a forecast comparing occupation demand growth to the local population growth and the projected educational attainment of those residents, matched to specific related programs offered locally. When an area, for example, has an occupation expected to grow quickly but the educational requirement for the occupation does not match well with the educational attainment of its residents, there is a high potential for an occupation shortfall in the region. Alternatively, slow-growing or contracting occupations often represent potential supply surpluses. While this an important high-level analysis for determining local occupation needs, the occupation gap should be considered along with other regional data including growth and separation forecasts, unemployment rates, wage trends, award and skill gap analyses, as well as local employer insights.

Key Insights:
- Heavy and Tractor-Trailer Truck Drivers and General and Operations Managers are the top occupations in talent shortage
- Growing talent shortage of Maintenance and Repair Workers and Heavy and Tractor-Trailer Truck Drivers
- Growing talent surplus of Cashiers and Fast Food and Counter Workers
- Farmworkers, Farm, Ranch, and Aquacultural Animals fell out of the top ten in terms of occupation talent surplus while Hosts and Hostesses move into the tenth spot

Average Annual Occupation Gaps (i.e. Talent Shortage), 2024Q1 through 2034Q1

Supply Deficit		Supply Surplus	
Heavy and Tractor-Trailer Truck Drivers ($59,100)	−28	Cashiers ($31,400)	110
General and Operations Managers ($100,800)	−24	Fast Food and Counter Workers ($31,500)	68
Software Developers ($108,400)	−17	Waiters and Waitresses ($25,500)	44
Cooks, Restaurant ($35,600)	−16	Retail Salespersons ($37,800)	36
Maintenance and Repair Workers, General ($53,200)	−15	Customer Service Representatives ($46,100)	24
Industrial Machinery Mechanics ($62,700)	−15	Office Clerks, General ($45,300)	19
Medical and Health Services Managers ($109,200)	−14	Food Preparation Workers ($34,200)	17
Registered Nurses ($91,400)	−13	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive ($46,700)	16
Industrial Engineers ($98,600)	−13	Bartenders ($27,700)	14
Financial Managers ($140,900)	−11	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop ($28,300)	13

The Role of Education

EMPLOYMENT FORECAST BY EDUCATION

While overall employment in Southwest Minnesota is forecast to decline by -0.7% annually on average, expected forecasts for occupations vary by the education required:

- Roles typically requiring a master's degree or doctoral degree are the only ones expected to grow (+0.3% and +0.1%, respectively)
- Occupations requiring any other type of education including no education are all expected to decline— but these declines are smaller than previously forecast in 2023Q2

Annual Average Projected Job Growth by Education Required for Southwest Minnesota, 2024Q1

Education Required	Growth
Doctoral or professional degree ($161,900)	%
Master's degree ($90,500)	0.3%
Bachelor's degree ($89,300)	−0.2%
Associate's degree ($64,200)	−0.2%
Postsecondary non-degree award ($53,600)	−0.3%
High school diploma or equivalent ($53,400)	−0.7%
Some college, no degree ($45,200)	−1.0%
None ($38,200)	−0.7%
All Levels ($59,500)	−0.5%
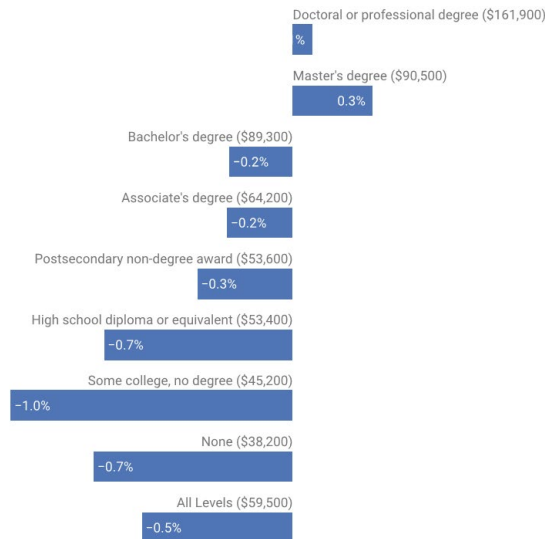
Employment by occupation data are estimates are as of 2024Q1. Education levels of occupations tare based on BLS assignments. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.

AWARD GAPS

Award gaps quantify the total number of postsecondary award completions in a region tied to an occupation benchmarked against national rates. In the Southwest region, local postsecondary programs are now likely underproducing Farmers, Ranchers, and Other Agricultural Managers, Licensed Practical and Licensed Vocational Nurses, and Medical and Health Services Managers. There is an oversupply of Secondary School Teachers, Registered Nurses and Managers completing local postsecondary programs compared to national volumes.

Award Gaps, All Occupations, Southwest Minnesota, 2024Q1

Supply Deficit		Supply Surplus	
Farmers, Ranchers, and Other Agricultural Managers	−127	Secondary School Teachers, Except Special and Career/Technical Education	270
Licensed Practical and Licensed Vocational Nurses	−76	Registered Nurses	205
Medical and Health Services Managers	−72	Managers, All Other	195
Industrial Engineers	−71	Elementary School Teachers, Except Special Education	177
Childcare Workers	−64	Area, Ethnic, and Cultural Studies Teachers, Postsecondary	85
Welders, Cutters, Solderers, and Brazers	−55	Middle School Teachers, Except Special and Career/Technical Education	75
General and Operations Managers	−49	Transportation, Storage, and Distribution Managers	74
Automotive Service Technicians and Mechanics	−33	Exercise Trainers and Group Fitness Instructors	55
Heavy and Tractor-Trailer Truck Drivers	−31	Education Administrators, Kindergarten through Secondary	42
Computer User Support Specialists	−28	Software Developers	41

Occupations in Current Shortage

Several occupations have zero unemployed talent in the Southwest as of 2024Q1 estimates, resulting in an estimated unemployment rate of 0%. The occupations listed below have nonexistent unemployed talent at the regional level and 75 people or more working in these positions locally. Some of these roles have low volumes of online job postings due to unique methods of recruiting talent for specialty roles, while others show high posting volumes which indicates unmet demand and significant likely shortages. All of these roles pay over the regional median of $48,900 annually, with many significantly higher.

RealTime Talent

Occupations with No Unemployed Workforce and Employing over 75 Workers, Southwest Minnesota 2024Q1

SOC	Occupation	Current						5-Year History		5-Year Forecast				
		Empl	Median Ann Wages[2]	LQ	Unempl	Unempl Rate	30-Day Online Job Ads[3]	Empl Change	Ann %	Total Demand	Exits	Trans-fers	Empl Change	Ann % Change
19-5011	Occupational Health and Safety Specialists	213	$85,500	0.94	0	n/a	71	38	4.0%	121	31	84	6	0.6%
31-9011	Massage Therapists	165	$56,900	0.61	0	n/a	4	-17	-1.9%	124	57	59	8	1.0%
47-4011	Construction and Building Inspectors	149	$77,500	0.54	0	n/a	34	14	2.0%	74	46	34	-7	-0.9%
13-2053	Insurance Underwriters	136	$69,500	0.63	0	n/a	10	-91	-9.8%	38	19	25	-7	-1.0%
19-3034	School Psychologists	132	$82,600	1.07	0	n/a	77	-23	-3.2%	36	11	29	-4	-0.6%
15-1212	Information Security Analysts	127	$116,600	0.38	0	n/a	131	10	1.7%	49	15	25	10	1.5%
47-5022	Excavating and Loading Machine and Dragline Operators, Surface Mining	121	$69,100	1.64	0	n/a	n/a	-31	-4.5%	54	27	31	-4	-0.7%
29-1031	Dietitians and Nutritionists	119	$71,500	0.75	0	n/a	19	1	0.1%	35	21	16	-2	-0.3%
33-1011	First-Line Supervisors of Correctional Officers	115	$88,600	1.03	0	n/a	0	-5	-0.8%	40	18	26	-4	-0.7%
19-3033	Clinical and Counseling Psychologists	109	$101,600	0.73	0	n/a	20	-2	-0.5%	29	12	14	2	0.5%
11-1031	Legislators	105	$65,700	1.25	0	n/a	n/a	4	0.7%	36	16	22	-2	-0.3%
27-1025	Interior Designers	104	$57,800	0.56	0	n/a	n/a	7	1.4%	44	22	23	-1	-0.3%
15-2031	Operations Research Analysts	103	$88,300	0.49	0	n/a	57	5	1.0%	39	16	17	7	1.2%
13-2081	Tax Examiners and Collectors, and Revenue Agents	101	$66,200	0.95	0	n/a	151	-2	-0.5%	35	18	19	-2	-0.4%
53-4011	Locomotive Engineers	87	$76,800	1.24	0	n/a	n/a	-16	-3.3%	31	12	21	-2	-0.6%
19-3051	Urban and Regional Planners	85	$89,300	1.01	0	n/a	8	5	1.1%	31	10	23	-1	-0.3%
51-8013	Power Plant Operators	83	$98,500	1.24	0	n/a	4	11	3.0%	15	10	19	-14	-3.5%
51-8011	Nuclear Power Reactor Operators	80	$129,500	6.46	0	n/a	1	13	3.5%	29	11	21	-3	-0.7%
47-4021	Elevator and Escalator Installers and Repairers	79	$90,900	1.53	0	n/a	n/a	11	3.1%	28	11	20	-2	-0.6%
11-9039	Education Administrators, All Other	78	$88,400	0.70	0	n/a	n/a	0	0.0%	24	10	15	-1	-0.3%
29-1041	Optometrists	77	$136,600	0.87	0	n/a	77	-5	-1.2%	13	9	2	1	0.3%
	Total - All Occupations	**325,147**	**$48,900**	**1.00**	**10,500**	**2.8%**	**28,866**	**-9,659**	**-0.6%**	**167,335**	**78,549**	**97,453**	**-8,667**	**-0.5%**

Job Posting Trends in Southwest Minnesota

Online job posting data reveals much about employer demand for certain skills, certifications, qualifications, and occupational competencies.

TOTAL JOBS

Total job postings in the past 12 months (11/1/23 – 10/31/24):

- 47,622 unique job postings advertised online in Southwest Minnesota
  - +2% compared to the 12 months prior
- 594,113 unique postings statewide
  - -10% compared to the 12 months prior

Total Jobs Advertised Monthly in Southwest Minnesota, October 2023-2024
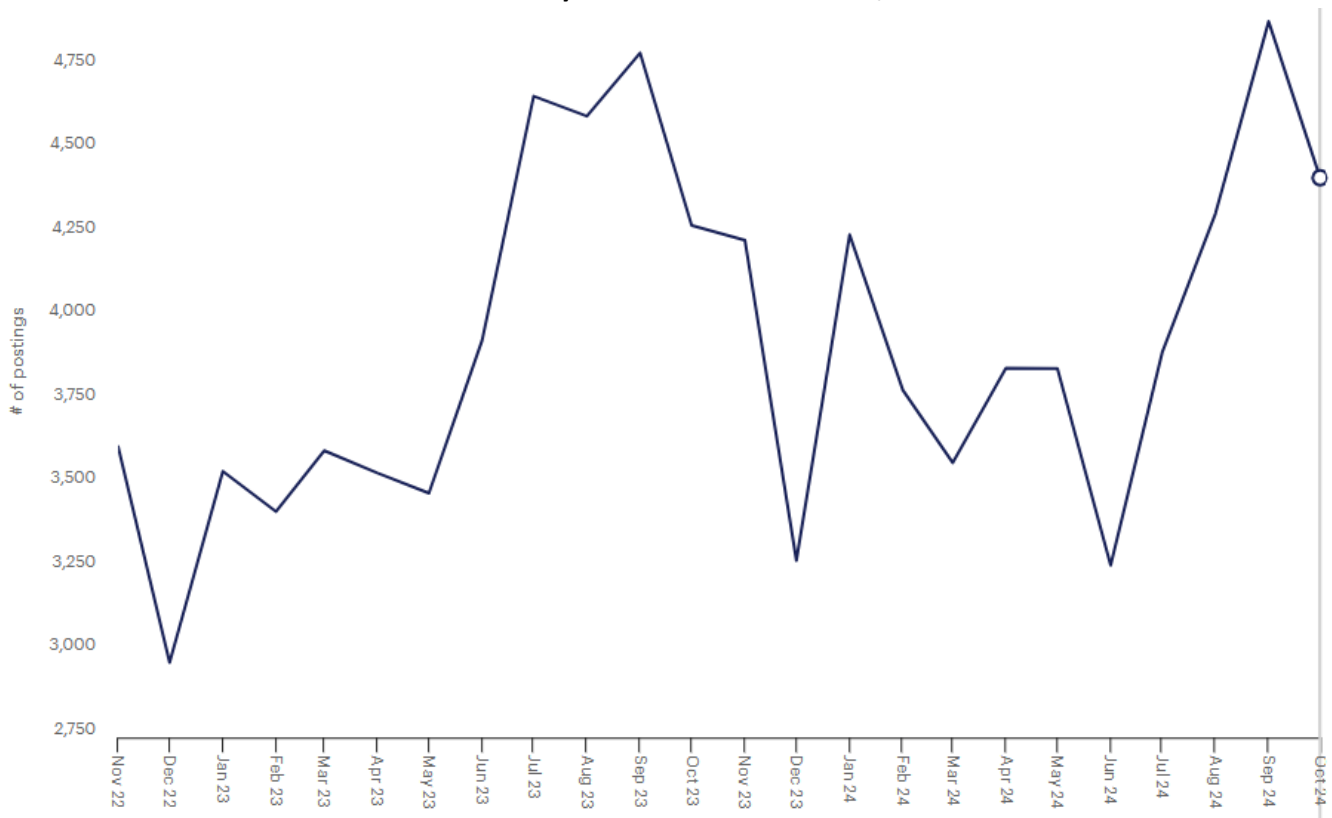
SOURCE: TalentNeuron accessed 11/1/2024

REMOTE AND HYBRID POSITIONS

Remote and hybrid positions have been shifting greatly in the past five years, and this trend plays out differently across Career and Technical Education (CTE) fields:

- 6% of all positions advertised in the past 12 months were explicitly listed as remote, hybrid, or telecommute roles—either permanently or temporarily
- Remote work is increasing year over year
  - Among all positions, the share of positions that are remote and hybrid remote increased by one percentage point from the prior year
  - Hybrid remote roles grew the most, representing 4% of all postings

- Arts, Communications and Information Systems has the highest volume and share of remote positions, at 12% of jobs advertised, but having dropped by five percentage points from the prior 12-month period

Total Remote Job Postings Advertised Monthly in Southwest Minnesota, October 2023-2024
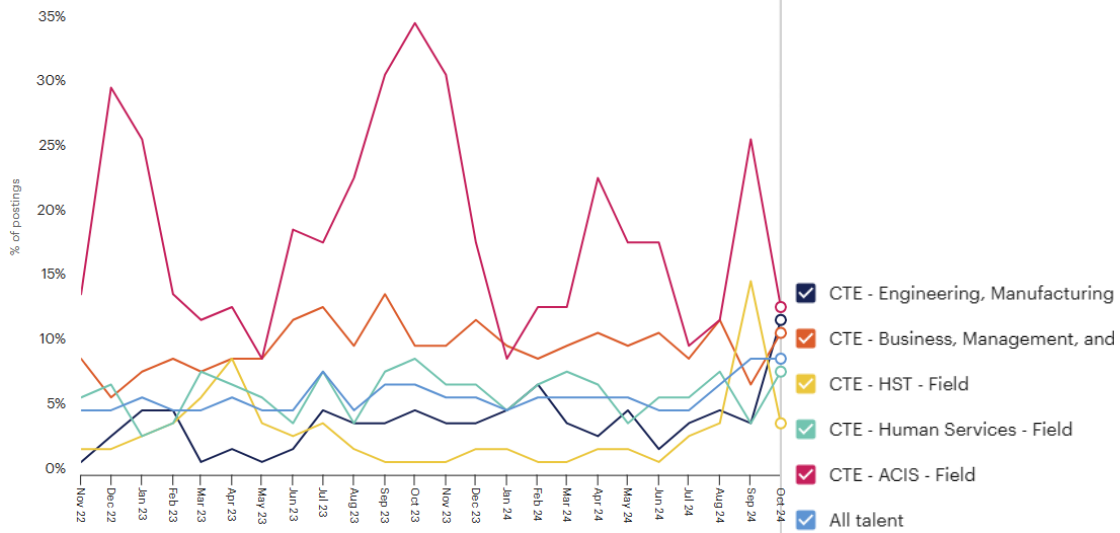
SOURCE: TalentNeuron accessed 11/1/2024

Remote Job Postings by Career Field Advertised in Southwest Minnesota, October 2023-2024
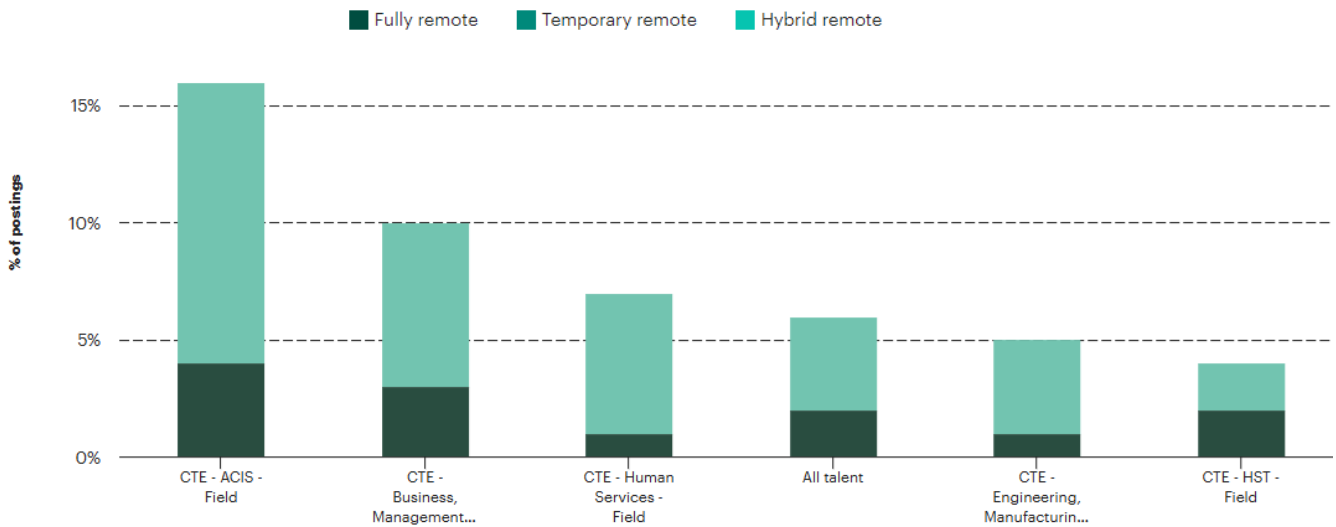
| | % of postings | | | | |
Talent Profile ⌄	Unspecified /Onsite ⌄	Total remote ⌄	Fully remote ⌄	Temporary remote ⌄	Hybrid remote ⌄
CTE - ACIS - Field	84% ▲ 5 pp	16% ▼ -5 pp	4% ▼ -2 pp	0% ▼ -3 pp	12% ▲ 0 pp
CTE - Business, Management, and Administration - Field	90% ▲ 0 pp	10% ▲ 0 pp	3% ▲ 0 pp	0% ▼ -1 pp	7% ▲ 1 pp
CTE - Human Services - Field	93% ▼ -1 pp	7% ▲ 1 pp	1% ▼ -1 pp	0% ▲ 0 pp	6% ▲ 2 pp
All talent	94% ▼ -1 pp	6% ▲ 1 pp	2% ▲ 0 pp	0% ▲ 0 pp	4% ▲ 1 pp
CTE - Engineering, Manufacturing, and Technology - Field	95% ▼ -2 pp	5% ▲ 2 pp	1% ▲ 0 pp	0% ▲ 0 pp	4% ▲ 2 pp
CTE - HST - Field	96% ▼ -1 pp	4% ▲ 1 pp	2% ▲ 0 pp	0% ▲ 0 pp	2% ▲ 1 pp

SOURCE: TalentNeuron accessed 11/1/2024

EVOLVING SKILLS

Talent accumulates valuable skills in a variety of ways beyond just work and education. Everything from self-study to apprenticeships/internships, as well as workforce training programs and general life experience all develop relevant skills. Assessing experience in terms of skills unearths a person's qualifications and more clearly identifies training needs for career growth. For example, servers trying to move beyond a likely transition (bartending, retail sales, and other hospitality jobs) to an aligned transition like public relations specialist, skills tell us where their current qualifications align and where there are gaps. This kind of gap analysis is possible at the occupation level and supports postsecondary planning, workforce development, and employer talent strategy.

Evolving skills key trends:
- Most of the **newest** skills on the rise in regional job postings include specialized technical and hard skills required for target occupations in dental health, STEM, and Information Technology cluster careers
- **Core** skills have shifted considerably in the region over the past year, with leadership, operations, and monitoring now ranking in high importance

Top Evolving Skills in Southwest Minnesota, October 2023-2024

🌱 New	🌿 Emerging	🌱 Growing	🌷 Core	🥀 Declining
1. Orthodontics 2. Knowledge manage... 3. AI platforms	There are no Emerging skills in the market	1. Collaboration	1. Operations 2. Leadership 3. Monitoring	1. Nursing
New skills whose future is uncertain.	Relatively new skills that are becoming more prevalent.	Fast-growing skills that are becoming core skills.	Skills that have been present in a high percentage of job postings for some time.	Skills that used to be essential but are becoming obsolete.

Career Fields

Each of the six Career and Technical Education (CTE) career fields has unique talent demand and employment forecasts, based on its mix of occupations and industry needs.

Health Science Technology
- Highest forecast growth among career fields (+0.1%)
- Lowest unemployment rate among career fields (1.6%)
- Second highest median wages

Human Services
- Second lowest unemployment rate among career fields (2.1%)
- Third highest employment in the region
- Second highest average entry-level wages of all career fields

Arts, Communications, and Information Systems
- Smallest local employment volume
- Highest median and average entry-level wages of all career fields
- Lowest concentration among career fields (LQ 0.64)

Business, Management, and Administration
- Largest employment volume in the Southwest region
- Concentration lower than the national average (LQ 0.88)
- Lowest median wages of all career fields
- Tied for greatest forecast decline (-0.8% annually)

Engineering, Manufacturing, and Technology
- Second highest employment volume in the region
- Concentration higher than the national average (LQ 1.18)
- Highest unemployment rate of all career fields (3.3%)

Agriculture, Food, and Natural Resources
- The most concentrated career field in the region (LQ 1.82)
- Third highest median wages among career fields
- Tied for greatest forecast decline (-0.8% annually)

CTE Field Employment and Wages in Southwest Minnesota, 2024Q1

CTE Field (occupation overlap exists, will not sum)	Current 2024Q1 Estimates							5-Year History	
	Empl	Avg Entry-Level Wages	Median Wages	LQ	Unempl	Unempl Rate	Online Job Ads³	Empl Change	Ann %
Health Science Technology	27,490	$38,500	$62,400	0.91	501	1.6%	7,348	-2,360	-1.6%
Human Services	50,154	$43,200	$56,400	0.98	1,108	2.1%	3,770	60	0.0%
Arts, Communications, and Information Systems	9,421	$52,100	$70,800	0.64	235	2.3%	695	-1,109	-2.2%
Business, Management, and Administration	126,320	$38,400	$51,700	0.88	4,578	3.2%	10,409	-2,773	-0.4%
Engineering, Manufacturing, and Technology	93,938	$43,100	$55,300	1.18	3,654	3.3%	6,222	-2,638	-0.6%
Agriculture, Food, and Natural Resources*	30,827	$40,000	$57,700	1.82	858	2.6%	1,164	-1,192	-0.8%
Total - All Occupations	**325,147**			1.00	10,500	2.8%	28,866	**-9,659**	**-0.6%**

Data as of 2024Q1 unless noted otherwise

Note: Figures may not sum due to rounding and overlap in occupations between career fields. All clusters are distinct occupations except for Agriculture, Food, and Natural Resources, which overlaps with other clusters. Employment by place of work.

1. Data based on a four-quarter moving average unless noted otherwise.
2. Wage data represent the average for all Covered Employment
3. Data represent found online ads active 10/1/2024-11/1/2024 in the selected region. Due to alternative county-assignment algorithms, ad counts in this analytic may not match that shown in RTI (nor in the popup window ad list). Ad counts for ZCTA-based regions are estimates.

CTE Field Baseline Employment Forecast for Southwest Minnesota, 2029Q1

CTE Field (occupation overlap exists, will not sum)	Current	5-Year Growth 2029Q1				
	Empl	Total Demand	Exits	Transfers	Empl Change	Ann % Change
Health Science Technology	27,490	11,544	5,590	5,854	100	0.1%
Human Services	50,154	24,773	12,043	13,160	-430	-0.2%
Arts, Communications, and Information Systems	9,421	3,384	1,479	2,139	-234	-0.5%
Business, Management, and Administration	126,320	74,049	34,980	44,070	-5,002	-0.8%
Engineering, Manufacturing, and Technology	93,938	44,338	19,391	27,265	-2,318	-0.5%
Agriculture, Food, and Natural Resources*	30,827	16,191	7,954	9,387	-1,150	-0.8%
Total - All Occupations	**325,147**	**167,335**	**78,549**	**97,453**	**-8,667**	**-0.5%**

Data as of 2024Q1 unless noted otherwise

Note: Figures may not sum due to rounding and overlap in occupations between career fields. All clusters are distinct occupations except for Agriculture, Food, and Natural Resources, which overlaps with other clusters. Employment by place of work.

1. Data based on a four-quarter moving average unless noted otherwise.
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Career Cluster Detail

Of the sixteen career clusters used by Career and Technical Education (CTE), twelve are forecast to decline in overall employment over the next ten years as of 2024Q1 estimates. The only four clusters forecasting growth are Health Science (+0.8%), Human Services (+3.3%), Information Technology (+1.9%), and STEM (+2.2%). All clusters saw improvements in employment outlook from the prior year's forecast.

Baseline 10-Year Forecasts by Career Cluster, Southwest Minnesota, 2024Q1
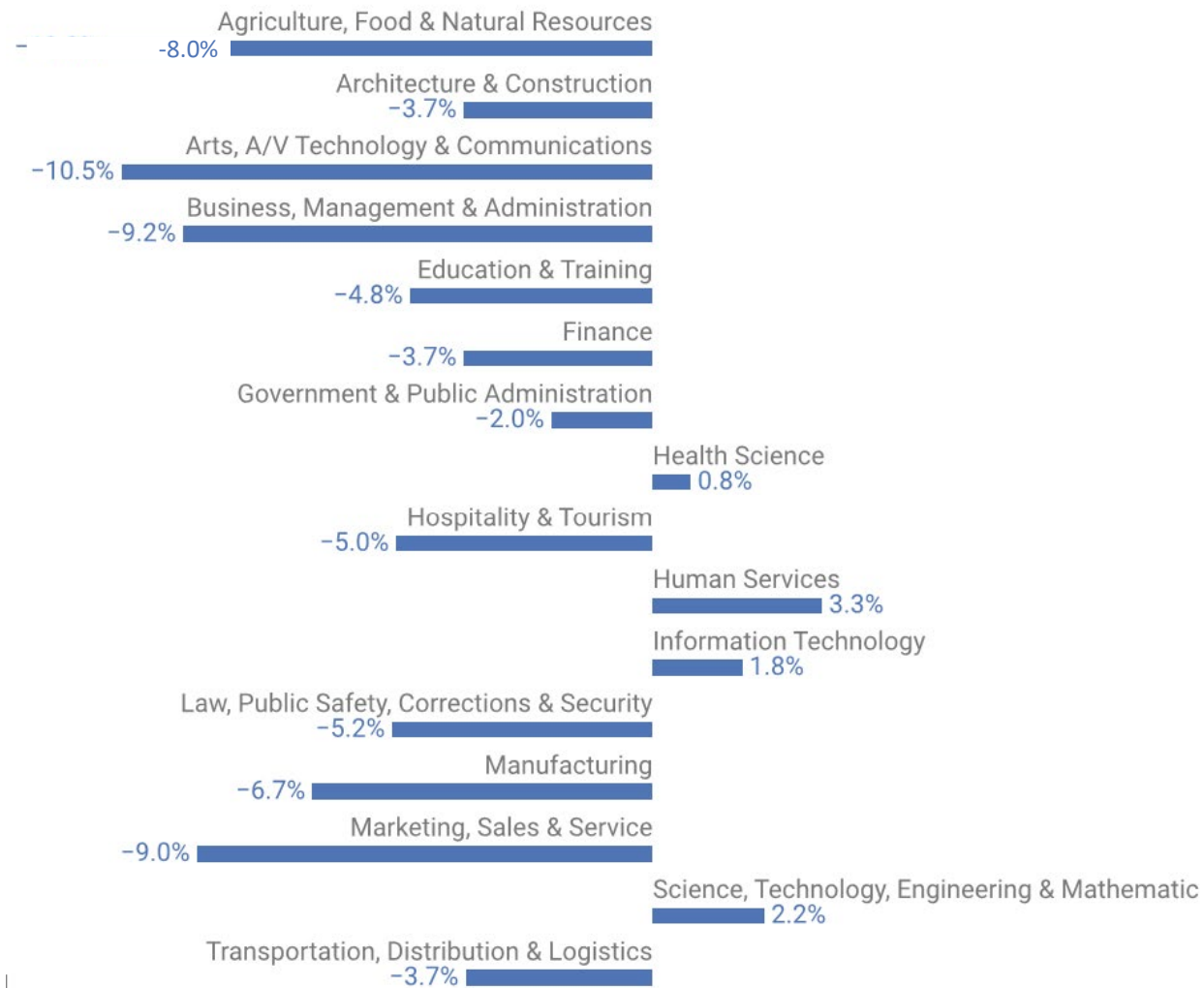
Career Cluster	Forecast
Agriculture, Food & Natural Resources	-8.0%
Architecture & Construction	-3.7%
Arts, A/V Technology & Communications	-10.5%
Business, Management & Administration	-9.2%
Education & Training	-4.8%
Finance	-3.7%
Government & Public Administration	-2.0%
Health Science	0.8%
Hospitality & Tourism	-5.0%
Human Services	3.3%
Information Technology	1.8%
Law, Public Safety, Corrections & Security	-5.2%
Manufacturing	-6.7%
Marketing, Sales & Service	-9.0%
Science, Technology, Engineering & Mathematic	2.2%
Transportation, Distribution & Logistics	-3.7%

Cluster forecasts estimated using Chmura, JobsEQ, based on 2024Q1 employment data. All clusters are distinct occupations except for Agriculture, Food, and Natural Resources, which overlaps with other clusters.

An accurate assessment of future occupation demand requires that future growth, retirements, and other job exits be considered. In the Southwest, Hospitality and Tourism, Business, Management, and Administration, and Marketing, Sales, and Service clusters are expected to have the highest annual job demand by volume of opportunities—due to retirements and job changes.

Nine of the sixteen career clusters have average wages above the average occupation wage in the region. The Science, Technology, Engineering and Mathematics cluster has the highest wages of the Career Clusters followed by the Information Technology and Finance clusters.

Employment, Wages, and Forecast by Career Cluster, 2024Q1

Career Cluster	Employment	Avg Ann Wages	Job Ads	Ann Empl Change	Ann Total Demand
Science, Technology, Engineering & Mathematics	4,232	$101,700	629	9	260
Information Technology	4,546	$93,800	526	8	276
Finance	8,800	$84,800	831	-34	625
Health Science	27,490	$82,500	7,420	19	2,307
Law, Public Safety, Corrections & Security	7,176	$68,200	669	-38	612
Government & Public Administration	2,668	$68,200	345	-5	233
Business, Management & Administration	49,633	$68,100	3,021	-481	4,560
Architecture & Construction	20,162	$63,900	878	-77	1,677
Education & Training	20,983	$63,200	1,023	-104	1,707
Agriculture, Food & Natural Resources*	30,827	$57,600	1,279	-238	-0.8%
Arts, A/V Technology & Communications	4,875	$56,700	167	-54	406
Marketing, Sales & Service	32,263	$52,400	3,250	-305	3,766
Manufacturing	41,995	$52,300	2,487	-292	4,028
Transportation, Distribution & Logistics	27,548	$51,800	2,209	-105	2,950
Human Services	19,327	$47,400	1,655	62	2,408
Hospitality & Tourism	35,623	$34,600	3,273	-186	5,984
Total - All Occupations	**325,147**	**$59,500**	**28,864**	**-1,758**	**33,652**

*Cluster forecasts estimated using Chmura, JobsEQ, based on 2024Q1 employment data. All clusters are distinct occupations except for Agriculture, Food, and Natural Resources, which overlaps with other clusters.

CAREER CLUSTER FORECASTS

Just as with industry clusters, it is possible to chart Career and Technical Education career clusters by wage, forecast, and local concentration. The chart below shows career clusters of employment in Southwest Minnesota. The larger the circle, the more concentrated the career cluster is in the region (compared to the national average); this is called a Location Quotient (LQ). Clusters are positioned on the chart based on their wages and forecast employment. Clusters higher up on the Y-axis of the chart have higher average wages, and clusters located further to the right on the X-axis of the chart have higher forecasted employment growth. In summary, large circles in the top-right corner of the chart would be considered high-wage, high-growth, uniquely important clusters for the region's economy. Smaller circles further to the bottom-left corner of the chart would be lower-wage, declining, underrepresented clusters.

The most highly concentrated career cluster in the Southwest region is Agriculture, Food, and Natural Resources:

- Location Quotient: 1.82
- Employment: 30,827 workers
- Average Wage: $57,600
- Employment Forecast: Projected to shrink by 0.8% annually over the next 10 years

Career Clusters for Southwest Minnesota as of 2024Q1

Bubble chart. Y-axis: Average wages ($ /hour), ranging from $20 to $120. X-axis: Average Annual Employment Forecast Rate(%) 2024Q1-2034Q1, ranging from -1.00 to 0.40.

Plotted clusters with labels:

- Science, Technology, Engineering & Mathematics — LQ: 0.88
- Finance — LQ: 0.71
- Business, Management & Administration — LQ: 0.83
- Health Science — LQ: 0.91
- Arts, A/V Technology & Communications — LQ: 0.95
- Architecture & Construction — LQ: 0.90
- Manufacturing — LQ: 1.64
- Transportation, Distribution & Logistics — LQ: 1.04
- Agriculture, Food, & Natural Resources — LQ: 1.82
- Human Services — LQ: 1.09
- Hospitality & Tourism — LQ: 0.93
- Competitive Advantage Threshold

Legend:
- Agriculture, Food & Natural Resources
- Architecture & Construction
- Arts, A/V Technology & Communications
- Business, Management & Administration
- Education & Training
- Finance
- Government & Public Administration
- Health Science
- Hospitality & Tourism
- Human Services
- Information Technology
- Law, Public Safety, Corrections & Security
- Manufacturing
- Marketing, Sales & Service
- Science, Technology, Engineering & Mathematics
- Transportation, Distribution & Logistics
- Competitive Advantage Threshold

Key Takeaways by Career Field

Health Science Technology	Human Services	Arts, Communications, and Information Technology
- Shortage of Medical and Health Services Managers - Unique high local concentration of Licensed Practical Nurses (LQ 1.47) - Employment forecast to grow (+0.1%) over the next five years. - Lowest unemployment rate of career fields (1.6%)	- High replacement needs - All top ten occupations are highly concentrated locally (LQ over 1.0) - Occupations shortage in Mental Health Counselors - Award gap (-64) of Childcare Workers in region - Surplus of Education Services awards	- Decrease in unemployment rate from previous year - High replacement demand - Continued shortage of software developers expected (-17 annually) - An award gap of at least 28 graduates needed to fill Computer User Support Specialist roles
Business, Management, and Administration	**Engineering, Manufacturing, and Technology**	**Agriculture, Food, and Natural Resources**
- Largest share of employment by career field - High unemployment (3.2%) - All of the ten top occupations by employment volume have forecasted declines over the next ten years - Shortage of at least 49 graduates needed to fill General and Operations Managers positions	- High unemployment (3.3%) - Exacerbation of talent shortage due to upcoming retirements with 47.6% of workers in this field 45 years or older - Light Truck Drivers is the only occupation in the top ten with project annual growth - Substantial award gap for Industrial Engineers (-71)	- Tied for greatest forecast decline (-0.8%) - This field has the highest local concentration (LQ 1.82) - Animal Caretakers is the only top ten occupation forecasting annual growth over the next ten years - Dramatic award gap for Farmers, Ranchers, and Other Agricultural Managers (shortage of 127 graduates)

Health Science Technology

The Health Science Technology field includes an array of careers in the health sciences, including the following career pathways:

- Therapeutic Services
- Diagnostic Services
- Support Services
- Health Informatics
- Biotechnology Research and Development

EMPLOYMENT FORECAST

Over the next five years, Health Science Technology field employment is forecast to increase by 0.1% on average annually, flattening out the downward trend observed in the region since 2020.

Baseline 5-Year Forecast for Health Science Technology Careers, Southwest Minnesota, 2024Q1
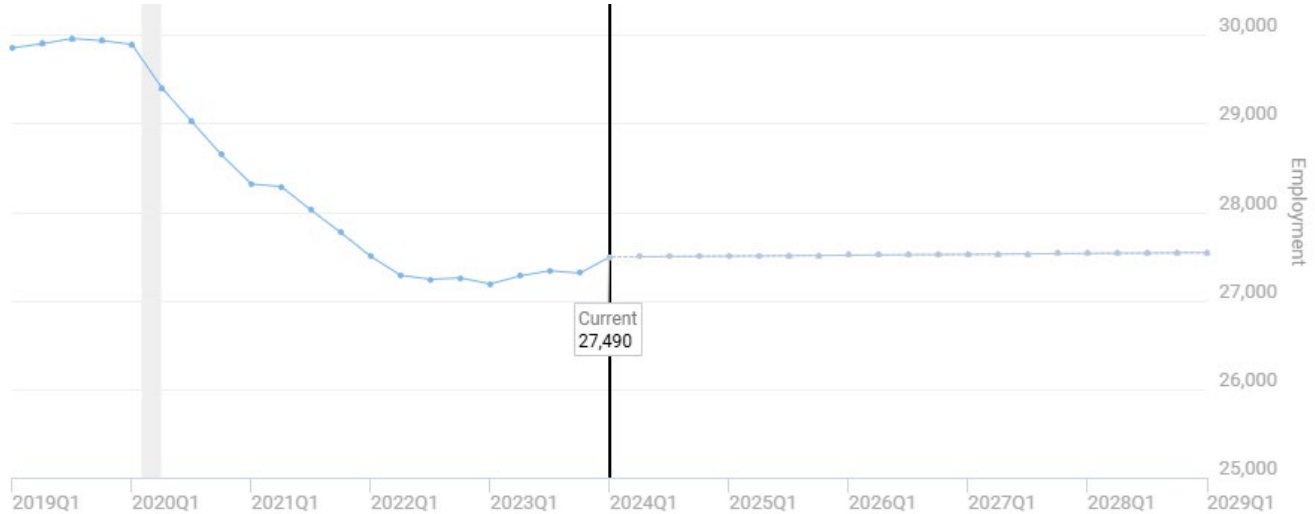
TOP OCCUPATIONS

A total of 27,490 people are employed in Health Science Technology roles regionally, accounting for about 8% of all regional employment. The field's median wage is $62,400. Home Health Aides and Medical and Health Services Managers are forecast to grow fastest of the top occupations in this career field, at 1.0% and 1.7% annually, respectively.

Top Ten Health Science Technology Occupations by Employment Volume, Southwest Minnesota, 2024Q1

6-Digit Occupation	Empl	Median Wages	LQ	Historical 5-Year Empl Change	Forecast 5-Year Demand	Forecast Annual Change
Registered Nurses	5,714	$91,000	0.89	126	1,442	-0.3%
Nursing Assistants	3,912	$39,700	1.40	-446	2,579	-0.5%
Home Health Aides	2,254	$36,000	1.12	-798	1,415	1.0%
Licensed Practical and Licensed Vocational Nurses	1,962	$58,100	1.47	-459	680	-0.5%
Medical Secretaries and Administrative Assistants	1,126	$46,800	0.80	-103	574	-0.1%
Medical Assistants	892	$47,100	0.57	-162	603	0.6%
Medical and Health Services Managers	881	$103,700	0.85	36	403	1.7%
Pharmacy Technicians	663	$43,500	0.74	-16	285	-0.2%
Dental Assistants	609	$60,700	0.82	8	418	0.0%
Pharmacists	517	$145,400	0.78	-20	82	-0.4%
Health Science (CTE Field)	**27,490**	**$62,400**	**0.91**	**-2,360**	**11,544**	**0.1%**

"Forecast 5-Year Demand" is the projected need for new entrants into an occupation over the next five years. New entrants are needed due to expected growth and to replace workers who left the occupation due to factors such as retirement or switching careers.

"Forecast Annual Change" is the expected baseline (most pessimistic) yearly change in employment due to national, long-term trend projections (per the BLS) as well as local factors such as industry mix, labor force participation rates, and population growth (as computed and modeled by RealTime Talent in JobsEQ).

TOP INDUSTRIES

Health Science Technology workers in Southwest Minnesota are most commonly employed by General Medical and Surgical Hospitals (28.1%). Nursing Care Facilities employ the next greatest share of talent (18.8%), followed by Offices of Physicians (11.6%).

Health Science Technology Field Employment by Industry, Southwest Minnesota, 2024Q1

Industry Title	% of Career Field Empl	Career Field Empl	10-Year Separations	10-Year Empl Change	10-Year Total Demand
General Medical and Surgical Hospitals	28.1%	7,728	5,220	-87	5,134
Nursing Care Facilities (Skilled Nursing Facilities)	18.8%	5,161	5,144	-418	4,726
Offices of Physicians	11.6%	3,196	2,243	103	2,346
Offices of Dentists	5.1%	1,400	1,311	9	1,320
Individual and Family Services	3.8%	1,040	1,211	234	1,445
Home Health Care Services	3.7%	1,029	962	137	1,099
Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly	3.7%	1,018	1,155	91	1,246
Offices of Other Health Practitioners	3.5%	973	738	88	826
Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	3.3%	905	888	-13	875
Other Professional, Scientific, and Technical Services	2.5%	695	720	103	823
Psychiatric and Substance Abuse Hospitals	2.2%	615	504	-33	471
Health and Personal Care Retailers	2.1%	581	425	-35	389
Elementary and Secondary Schools	1.7%	478	308	-17	291
Outpatient Care Centers	1.4%	375	290	66	356
Colleges, Universities, and Professional Schools	1.0%	280	179	11	191
Executive, Legislative, and Other General Government Support	1.0%	271	209	-3	206
Medical and Diagnostic Laboratories	0.7%	185	142	9	151
Warehouse Clubs, Supercenters, and Other General Merchandise Retailers	0.6%	177	131	-15	116
Other Residential Care Facilities	0.6%	167	163	-5	158
Grocery and Convenience Retailers	0.5%	144	106	-8	97
All Others	3.9%	1,073	834	-7	826

CAREER FIELD DEMOGRAPHICS

- The Health Science Technology field is predominantly female (81.8%) by gender and white (89.7%) by race, but both Black (3.5%) and Asian talent (2.8%) are slightly more represented in this field's workforce than the regional workforce composition overall
- Hispanic/Latine talent is underrepresented in this field (by about 3.3 percentage points)
- A higher share of the field's workforce is between the ages of 25 and 44 (44.5%) compared to the regional workforce composition overall by about 6.2 percentage points
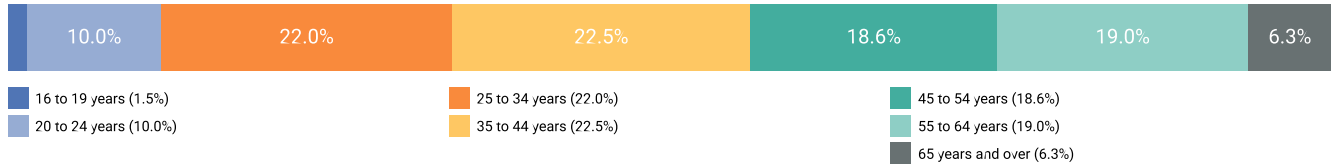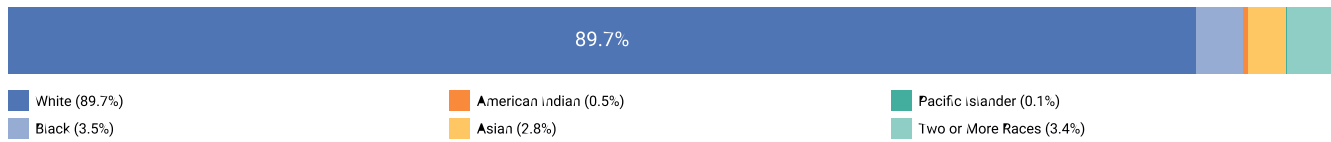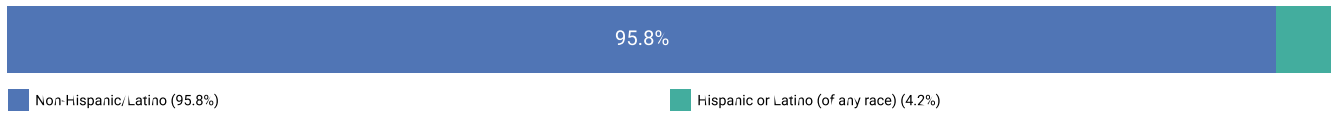
Age

| 10.0% | 22.0% | 22.5% | 18.6% | 19.0% | 6.3% |

- 16 to 19 years (1.5%)
- 20 to 24 years (10.0%)
- 25 to 34 years (22.0%)
- 35 to 44 years (22.5%)
- 45 to 54 years (18.6%)
- 55 to 64 years (19.0%)
- 65 years and over (6.3%)

Race

| 89.7% |

- White (89.7%)
- Black (3.5%)
- American Indian (0.5%)
- Asian (2.8%)
- Pacific Islander (0.1%)
- Two or More Races (3.4%)

Ethnicity

| 95.8% |

- Non-Hispanic/Latino (95.8%)
- Hispanic or Latino (of any race) (4.2%)

Gender

| 18.2% | 81.8% |

- Male (18.2%)
- Female (81.8%)

EDUCATIONAL ATTAINMENT AND REQUIREMENTS

The charts below illustrate the estimated educational attainment of current workers in this career field, followed by the typical education and training requirements in the field.

- Generally, the Southwest Minnesota Health Science Technology workforce has a close match to the education and training required for existing roles
  - 18.4% of Health Science Technology positions require no educational award, and about 16.7% of the workforce holds only a high school diploma or less
  - 43.8% of the Health Science Technology workforce hold a two-year degree or completed some college, compared to 38.1% of local jobs in Health Science Technology that typically require a certificate or two-year degree

Educational Attainment
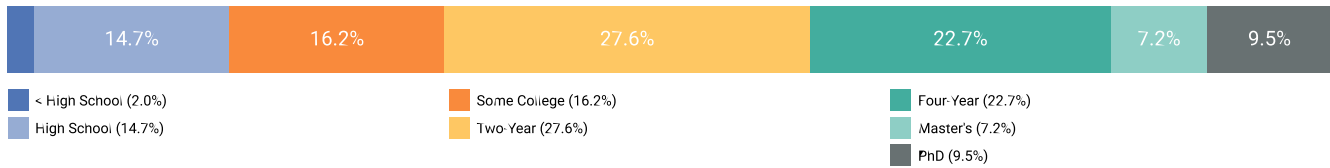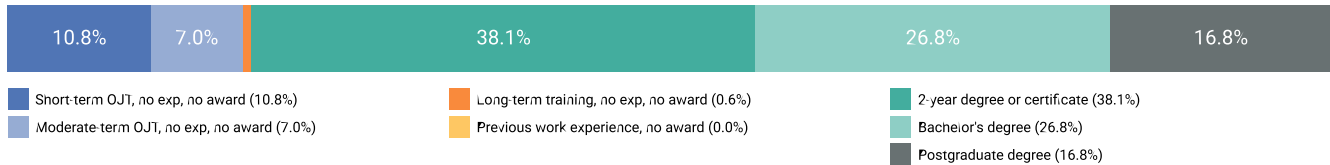
14.7%	16.2%	27.6%	22.7%	7.2%	9.5%

< High School (2.0%)   Some College (16.2%)   Four-Year (22.7%)
High School (14.7%)   Two-Year (27.6%)   Master's (7.2%)
    PhD (9.5%)

Education and Training Requirements

10.8%	7.0%	38.1%	26.8%	16.8%

Short-term OJT, no exp, no award (10.8%)   Long-term training, no exp, no award (0.6%)   2-year degree or certificate (38.1%)
Moderate-term OJT, no exp, no award (7.0%)   Previous work experience, no award (0.0%)   Bachelor's degree (26.8%)
    Postgraduate degree (16.8%)

OCCUPATION GAPS

The chart below shows the potential average annual talent shortages over ten years.

No occupations in the Health Science Technology field are forecasting talent surplus. Medical and Health Service Managers and Registered Nurses are the two occupations with the greatest annual shortages in the Southwest. Other occupations of high shortage have remained consistent with prior estimates.

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Health Science Technology, Southwest Minnesota, 2024Q1
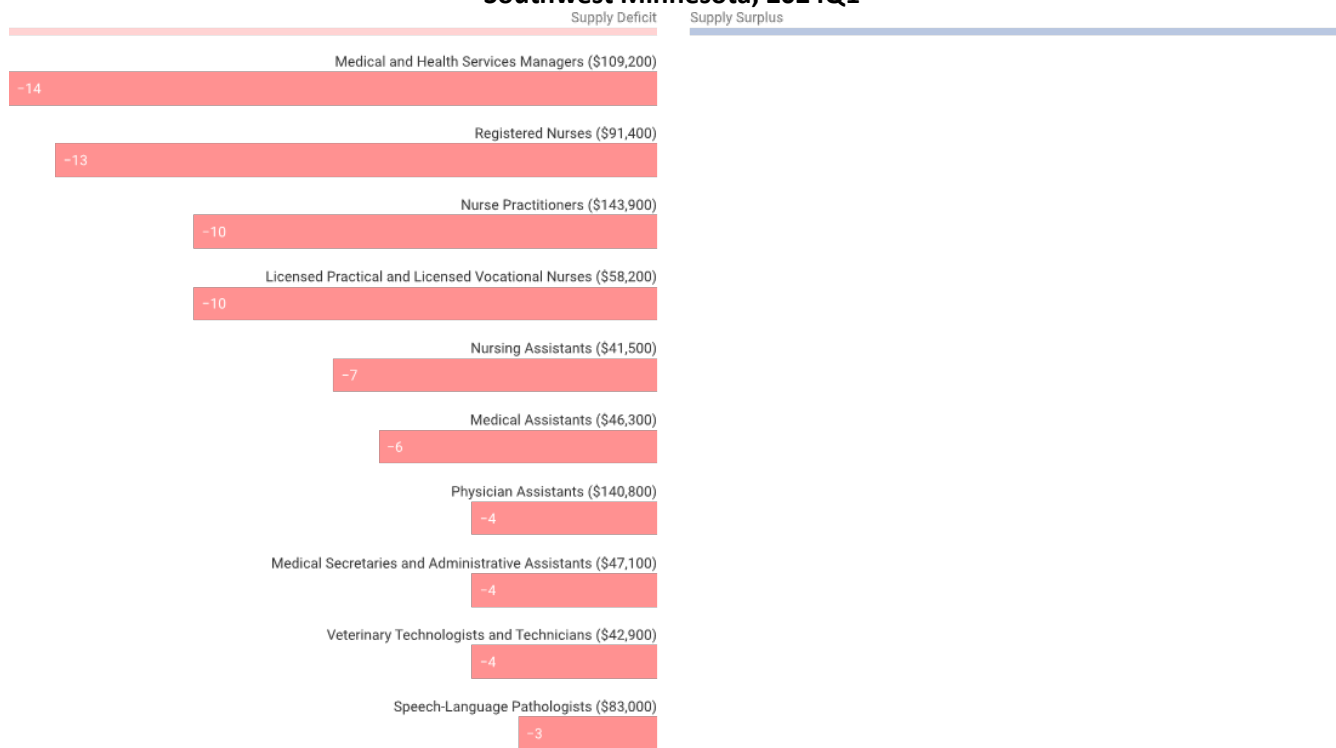
	Supply Deficit	Supply Surplus

Medical and Health Services Managers ($109,200)
-14

Registered Nurses ($91,400)
-13

Nurse Practitioners ($143,900)
-10

Licensed Practical and Licensed Vocational Nurses ($58,200)
-10

Nursing Assistants ($41,500)
-7

Medical Assistants ($46,300)
-6

Physician Assistants ($140,800)
-4

Medical Secretaries and Administrative Assistants ($47,100)
-4

Veterinary Technologists and Technicians ($42,900)
-4

Speech-Language Pathologists ($83,000)
-3

AWARD GAPS

The chart below shows the shortfall of new postsecondary graduates needed to meet local demand, benchmarked against national average volumes of graduates in the 2022-23 school year.

The Southwest has several Health Science Technology award shortages and some general misalignments:

- All but eight Health Science Technology occupations have a local shortage of new graduates from local postsecondary institutions when compared to national averages, with local employers likely filling a large share of local job openings with talent trained outside of the region
- Southwest colleges and universities are underproducing about 76 Registered Nurse and 72 Medical and Health Services Manager graduates annually that are needed to fill positions open with employers in the region

Award Gaps in Health Science Technology, Southwest Minnesota, 2024Q1
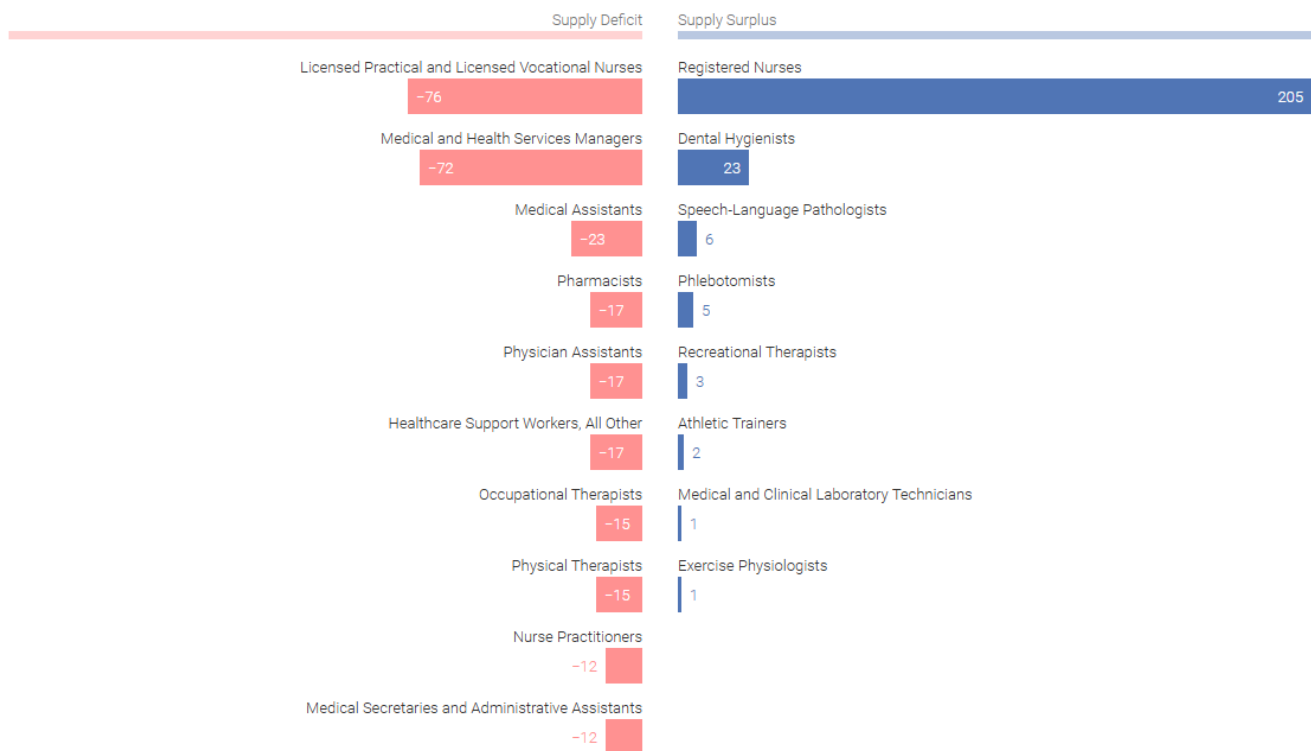
Supply Deficit		Supply Surplus	
Licensed Practical and Licensed Vocational Nurses	−76	Registered Nurses	205
Medical and Health Services Managers	−72	Dental Hygienists	23
Medical Assistants	−23	Speech-Language Pathologists	6
Pharmacists	−17	Phlebotomists	5
Physician Assistants	−17	Recreational Therapists	3
Healthcare Support Workers, All Other	−17	Athletic Trainers	2
Occupational Therapists	−15	Medical and Clinical Laboratory Technicians	1
Physical Therapists	−15	Exercise Physiologists	1
Nurse Practitioners	−12		
Medical Secretaries and Administrative Assistants	−12		

ORIGIN, GATEWAY, AND TARGET OCCUPATIONS

This section offers an Origin-to-Gateway-to-Target model analysis for how to help move students from entry points into their field of interest into both likely and other aligned careers, considering automation, remote work, and the changing work environment.

Origin-to-Gateway-to-Target Occupations for Health Science Technology, Southwest Minnesota, 2024Q1

Target Occupations (All HW, HD, HS, OG)
Registered Nurses
Licensed Practical & Licensed Vocational Nurses (AG)
Medical & Health Services Managers (AG)
Dental Assistants
Dental Hygienists

Gateway Occupations
Medical Secretaries & Administrative Assistants (HD, OG, AG)
Medical Assistants (HS, HD, OG, AG)
Psychiatric Aides (HD, AG)
Medical Equipment Preparers (HD, AG)
Medical Transcriptionists (HS)

Origin Occupations
Nursing Assistants (HS, HD, OG)
Home Health Aides (HD)
Pharmacy Technicians (OG, AG)
Veterinary Technologists & Technicians (HS, HD, OG)
Healthcare Support Workers (HD, AG)

HW = High-Wage; HS=High-Skill; HD=High-Demand; OG=Occupation Gaps; AG=Award Gaps

Featured Pathway

Consistent with observations in 2023, the Southwest region's nursing pathway requires further expansion and stabilization to respond to rising demand, particularly at the Nursing Assistant (LQ 1.4) and Licensed Practical & Licensed Vocational Nursing (LQ 1.47) levels. The Target occupation of Registered Nurse remains relatively highly concentrated in the Southwest region with a location quotient of 0.99. This role is in high demand and currently experiencing an occupation gap.

Another pathway to consider is Medical Services. The Target Occupation of Medical and Health Services Managers is moderately concentrated in the region with a location quotient of 0.85. The Gateway occupations of Medical Assistants and Medical Secretaries and Administrative Assistants are also in high demand and moderately concentrated in the region. All three occupations are experiencing award gaps and occupation gaps in the region. The Origin occupation of Healthcare Support workers is also in high demand and highly concentrated in the region with a location quotient of (1.53). There are multiple entry point and gateway occupations in this pathway.

Origin	Target	
Nursing Assistants (HS, HD, OG)	**Licensed Practical & Licensed Vocational Nurses (HW, HS, HD, OG, AG)**	**Registered Nurses (HW, HS, HD, OG)**

Origin	Gateway	Target
Healthcare Support Workers (HD, AG)	**Medical Secretaries & Administrative Assistants (HD, OG. AG)** **Medical Assistants (HS, HD, OG, AG)**	**Medical & Health Service Managers (HW, HS, HD, OG, AG)**

RealTime Talent
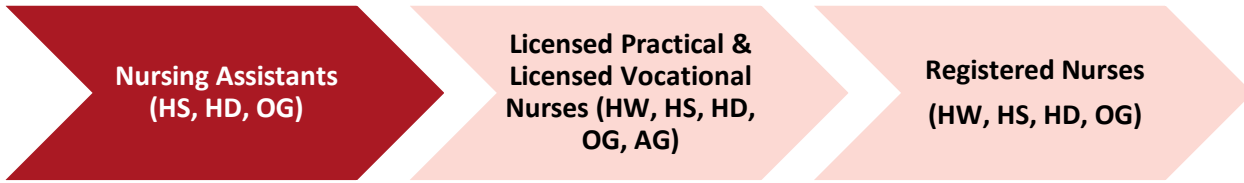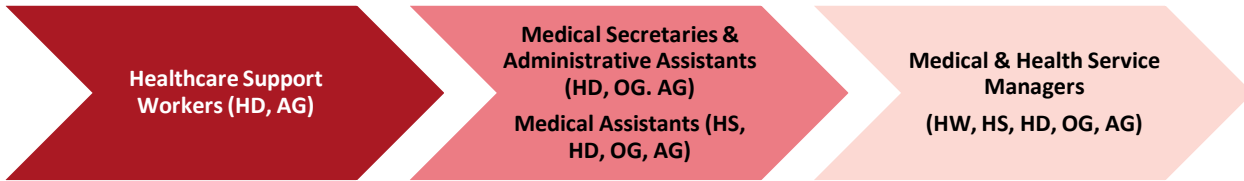
OGT Wages and Experience Level Requirements, Health Science Technology, Southwest Minnesota, 2024Q1

	SOC	Occupation	Empl	Mean	Entry Level	Experienced	10%	25%	50% Median	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Target	29-1141	Registered Nurses	5,714	$91,400	$74,300	$99,900	$71,300	$80,700	$91,000	$103,300	$113,200	BA	None	None
	29-2061	Licensed Practical and Licensed Vocational Nurses	1,962	$58,200	$51,200	$61,700	$50,800	$52,800	$58,100	$61,700	$66,700	Certificate	None	None
	11-9111	Medical and Health Services Managers	881	$109,200	$75,200	$126,100	$70,000	$86,200	$103,700	$124,100	$145,300	BA	< 5 years	None
	31-9091	Dental Assistants	609	$58,100	$49,100	$62,600	$49,000	$51,100	$60,700	$62,800	$64,500	Certificate	None	None
	29-1292	Dental Hygienists	432	$89,500	$81,000	$93,700	$80,800	$82,200	$87,100	$99,600	$104,000	AS	None	None
Gateway	43-6013	Medical Secretaries and Administrative Assistants	1,126	$47,100	$39,400	$50,900	$39,200	$40,900	$46,800	$50,500	$57,900	HS/GED	None	Mod-term OJT
	31-9092	Medical Assistants	892	$46,300	$36,600	$51,200	$35,000	$40,100	$47,100	$50,500	$56,300	Certificate	None	None
	31-1133	Psychiatric Aides	113	$47,000	$32,700	$54,100	$32,900	$34,700	$48,800	$57,400	$57,500	HS/GED	None	Short-term OJT
	31-9093	Medical Equipment Preparers	103	$45,900	$37,300	$50,200	$36,100	$40,200	$46,200	$51,300	$55,500	HS/GED	None	Mod-term OJT
	31-9094	Medical Transcriptionists	34	$48,600	$41,000	$52,300	$39,400	$44,000	$47,400	$53,700	$60,900	Certificate	None	None
Origin	31-1131	Nursing Assistants	3,912	$41,500	$37,900	$43,300	$37,400	$38,700	$39,700	$45,100	$47,600	Certificate	None	None
	31-1121	Home Health Aides	2,254	$35,800	$30,600	$38,400	$29,800	$32,400	$36,000	$38,200	$41,100	HS/GED	None	Short-term OJT
	29-2052	Pharmacy Technicians	663	$44,700	$37,600	$48,300	$37,400	$38,700	$43,500	$49,400	$53,600	HS/GED	None	Mod-term OJT
	29-2056	Veterinary Technologists and Technicians	367	$42,900	$36,000	$46,300	$34,900	$38,400	$42,300	$46,900	$49,500	AS	None	None
	31-9099	Healthcare Support Workers, All Other	336	$41,500	$33,800	$45,300	$32,000	$36,900	$39,600	$47,000	$49,300	HS/GED	None	None

Human Services

The Human Services field includes a wide range of career pathways sorted into the following career clusters:

- Education and Training
- Law, Public Safety, Corrections, and Security
- Government and Public Administration
- Human Services

EMPLOYMENT FORECAST

Total employment in Human Services in Southwest Minnesota is nearly the same as regional employment in the field in 2019. Over the next five years, Human Services employment is forecast to decline by about -0.2% on average annually.

Baseline 5-Year Forecast for Human Services Careers, Southwest Minnesota, 2024Q1
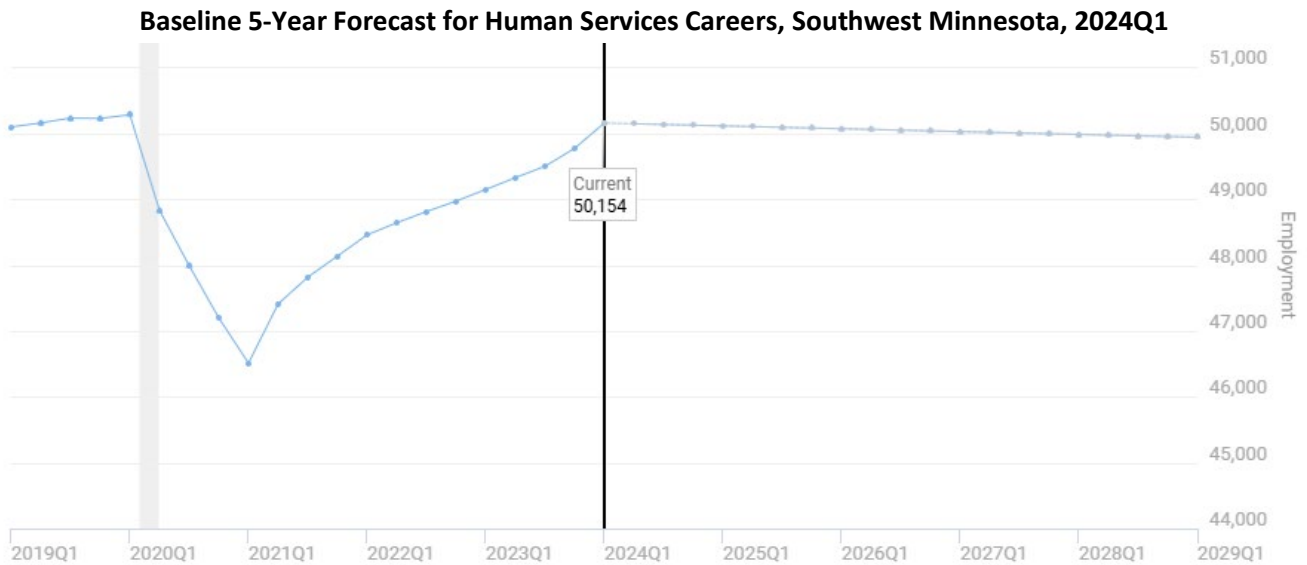
TOP OCCUPATIONS

A total of 50,154 people are employed in Human Services roles regionally, accounting for about 15% of all regional employment. The field's median wage is $56,400. Personal Care Aides have the highest forecast growth of top Human Servies occupations.

Top Ten Human Services Occupations by Employment Volume, Southwest Minnesota, 2024Q1

6-Digit Occupation	Empl	Median Wages	LQ	Historical 5-Year Empl Change	Forecast 5-Year Demand	Forecast Annual Change
Personal Care Aides	6,385	$36,000	1.11	1,017	4,899	1.0%
Teaching Assistants, Except Postsecondary	4,052	$38,200	1.60	-37	2,139	-0.7%
Elementary School Teachers, Except Special Education	3,145	$64,700	1.13	0	917	-0.7%
Secondary School Teachers, Except Special and Career/Technical Education	2,361	$66,600	1.13	0	621	-0.7%
Childcare Workers	1,953	$30,500	1.19	-321	1,492	-0.7%
Police and Sheriffs Patrol Officers	1,388	$76,300	1.06	49	494	-0.4%
Middle School Teachers, Except Special and Career/Technical Education	1,324	$66,800	1.10	2	387	-0.7%
Preschool Teachers, Except Special Education	1,296	$39,100	1.28	20	652	-0.3%
Social and Human Service Assistants	1,139	$47,600	1.33	-30	602	0.3%
Court, Municipal, and License Clerks	842	$51,400	2.59	20	399	-0.4%
Human Services (CTE Field)	**50,154**	**$56,400**	**0.98**	**60**	**24,773**	**-0.2%**

"Forecast 5-Year Demand" is the projected need for new entrants into an occupation over the next five years. New entrants are needed due to expected growth and to replace workers who left the occupation due to factors such as retirement or switching careers.

"Forecast Annual Change" is the expected baseline (most pessimistic) yearly change in employment due to national, long-term trend projections (per the BLS) as well as local factors such as industry mix, labor force participation rates, and population growth (as computed and modeled by RealTime Talent in JobsEQ).

TOP INDUSTRIES

The largest share of regional Human Services talent in the Southwest is employed by Elementary and Secondary Schools (30.6%), followed by Executive, Legislative, and Other General Government Support (11.2%). Individual and Family Services continues to have high forecasted growth and replacement demand needs.

Human Services Field Employment by Industry, Southwest Minnesota, 2024Q1

Industry Title	% of Career Field Empl	Career Field Empl	10-Year Separations	10-Year Empl Change	10-Year Total Demand
Elementary and Secondary Schools	30.6%	15,367	12,779	-1,001	11,777
Executive, Legislative, and Other General Government Support	11.2%	5,593	4,779	-226	4,552
Individual and Family Services	7.8%	3,891	5,104	836	5,940
Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	4.9%	2,441	2,989	-54	2,936
Colleges, Universities, and Professional Schools	4.6%	2,320	1,954	57	2,011
Child Care Services	4.2%	2,115	2,742	-165	2,576
Religious Organizations	4.1%	2,033	2,008	-100	1,908
Personal Care Services	2.4%	1,226	1,607	44	1,651
Justice, Public Order, and Safety Activities	2.3%	1,175	965	-72	893
Home Health Care Services	2.2%	1,090	1,543	135	1,678
Vocational Rehabilitation Services	1.6%	816	775	-125	650
Administration of Human Resource Programs	1.6%	807	671	-44	628
Other Residential Care Facilities	1.6%	803	943	-35	907
Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly	1.5%	770	1,112	120	1,232
Other Schools and Instruction	1.4%	678	865	-9	856
Legal Services	1.3%	631	422	-27	395
Civic and Social Organizations	1.2%	612	938	-18	920
Junior Colleges	1.2%	586	481	-28	453
Nursing Care Facilities (Skilled Nursing Facilities)	1.2%	581	678	-53	624
General Medical and Surgical Hospitals	1.0%	518	464	-18	447
All Others	12.2%	6,100	6,567	0	6,567

CAREER FIELD DEMOGRAPHICS

- The Human Services field is predominantly female (67.0%) and white (90.8%), but Black talent (2.9%) is slightly more represented in the field's workforce as well compared to rates in the overall workforce (by about 0.5 percentage points)
- Talent between the ages of 35 and 54 years, and over 65 is overrepresented in the Human Services field in the Southwest region compared to the overall workforce's demographics

Age
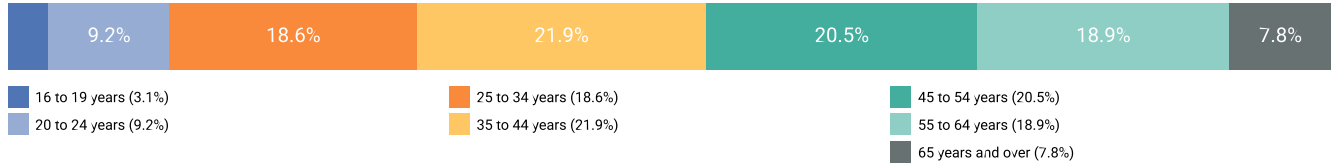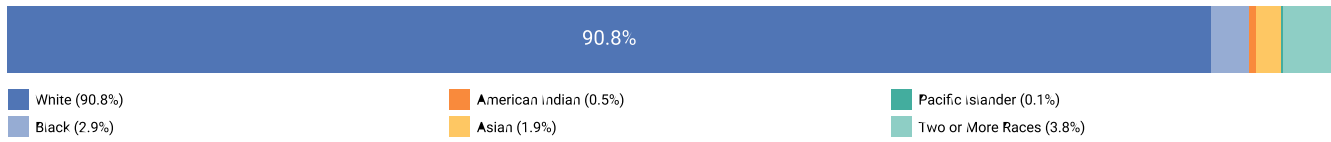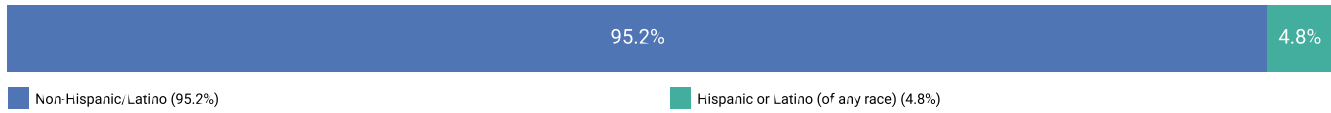
	9.2%	18.6%	21.9%	20.5%	18.9%	7.8%

- 16 to 19 years (3.1%)
- 20 to 24 years (9.2%)
- 25 to 34 years (18.6%)
- 35 to 44 years (21.9%)
- 45 to 54 years (20.5%)
- 55 to 64 years (18.9%)
- 65 years and over (7.8%)

Race

90.8%			

- White (90.8%)
- Black (2.9%)
- American Indian (0.5%)
- Asian (1.9%)
- Pacific Islander (0.1%)
- Two or More Races (3.8%)

Ethnicity

95.2%	4.8%

- Non-Hispanic/Latino (95.2%)
- Hispanic or Latino (of any race) (4.8%)

Gender

33.0%	67.0%

- Male (33.0%)
- Female (67.0%)

EDUCATIONAL ATTAINMENT AND REQUIREMENTS

The charts below illustrate the estimated educational attainment of current workers in this career field, followed by the typical education and training requirements in the field.

- In general, the Southwest Human Services workforce is moderately over-skilled for the typical credentials of Human Services positions
- For example, over half (52.3%) of the Human Services workforce has a four-year degree or more, whereas 46.1% of jobs require a bachelor's or postgraduate degree
- About 29.4% of the Human Services workforce has a two-year degree or certificate as their highest level of education, while only 9.4% of positions hold that requirement

Educational Attainment
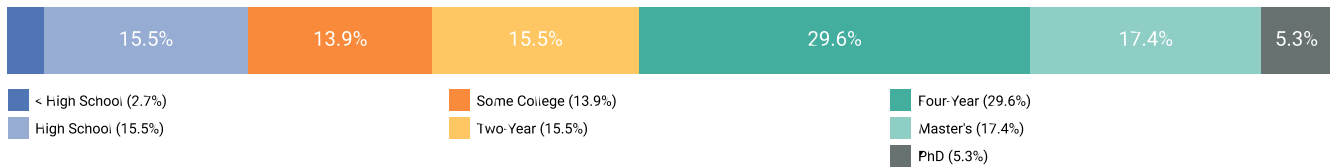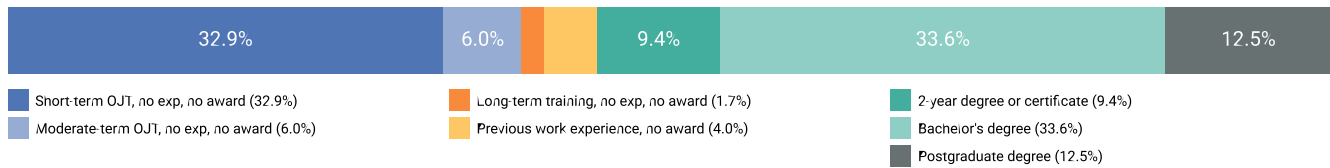
| | 15.5% | 13.9% | 15.5% | 29.6% | 17.4% | 5.3% |

- < High School (2.7%)
- High School (15.5%)
- Some College (13.9%)
- Two-Year (15.5%)
- Four-Year (29.6%)
- Master's (17.4%)
- PhD (5.3%)

Education and Training Requirements

| 32.9% | 6.0% | | | 9.4% | 33.6% | 12.5% |

- Short-term OJT, no exp, no award (32.9%)
- Moderate-term OJT, no exp, no award (6.0%)
- Long-term training, no exp, no award (1.7%)
- Previous work experience, no award (4.0%)
- 2-year degree or certificate (9.4%)
- Bachelor's degree (33.6%)
- Postgraduate degree (12.5%)

OCCUPATION GAPS

The chart below shows the potential average annual talent shortages over ten years.

In Human Services, Mental Health Counselors, Community Service Managers, and Police Officers remain the top occupations of shortage in the region. Ten occupations continue to forecast slight talent surpluses in the region in relation to demand.

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Human Services, Southwest Minnesota, 2024Q1

Supply Deficit		Supply Surplus	
Substance Abuse, Behavioral Disorder, and Mental Health Counselors ($55,100)	−6	Childcare Workers ($31,000)	8
Social and Community Service Managers ($82,900)	−4	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers ($29,300)	5
Police and Sheriff's Patrol Officers ($75,500)	−4	School Bus Monitors ($34,800)	3
Child, Family, and School Social Workers ($65,900)	−3	Residential Advisors ($46,600)	3
Court, Municipal, and License Clerks ($53,700)	−3	Exercise Trainers and Group Fitness Instructors ($43,700)	3
Firefighters ($44,000)	−3	Legal Secretaries and Administrative Assistants ($52,800)	2
Hairdressers, Hairstylists, and Cosmetologists ($40,000)	−3	Protective Service Workers, All Other ($41,700)	2
Lawyers ($124,800)	−3	Security Guards ($44,100)	2
Health Specialties Teachers, Postsecondary ($113,400)	−3	Teachers and Instructors, All Other ($67,000)	1
Marriage and Family Therapists ($73,700)	−2	Rehabilitation Counselors ($45,500)	1

AWARD GAPS

The chart below shows the shortfall of new postsecondary graduates needed to meet local demand, benchmarked against national average volumes of graduates in the 2022-23 school year.

Southwest Minnesota faces several notable Human Services award shortages and some general misalignments:

- Multiple Human Services occupations have a modest local shortage of new graduates from local postsecondary programs, with local employers likely filling a share of local job openings with talent trained outside of the region
- Childcare and Social Work programs are underproducing the most graduates; Southwest Minnesota colleges and universities are underproducing about 64 graduates annually that are needed to fill Childcare Worker positions open in the region, plus an additional 27 Social and Human Services Assistants and 26 Lawyers.
- In contrast, the region's postsecondary institutions are producing a surplus of Educators, especially Secondary and Elementary School Teachers that are likely to be helping meet significant talent shortages both locally and in other parts of the state

Award Gaps in Human Services, Southwest Minnesota, 2024Q1

Supply Deficit		Supply Surplus	
Childcare Workers	−64	Secondary School Teachers, Except Special and Career/Technical Education	270
Social and Human Service Assistants	−27	Elementary School Teachers, Except Special Education	177
Lawyers	−26	Area, Ethnic, and Cultural Studies Teachers, Postsecondary	85
Firefighters	−22	Middle School Teachers, Except Special and Career/Technical Education	75
Hairdressers, Hairstylists, and Cosmetologists	−18	Exercise Trainers and Group Fitness Instructors	55
Correctional Officers and Jailers	−15	Education Administrators, Kindergarten through Secondary	42
Community and Social Service Specialists, All Other	−13	Coaches and Scouts	31
Barbers	−11	Art, Drama, and Music Teachers, Postsecondary	26
Instructional Coordinators	−10	Community Health Workers	26
Occupational Health and Safety Specialists	−6	Compliance Officers	25

ORIGIN, GATEWAY, AND TARGET OCCUPATIONS

This section offers an Origin-to-Gateway-to-Target model analysis for how to help move students from entry points into their field of interest into both likely and other aligned careers, considering automation, remote work, and the changing work environment.

Origin-to-Gateway-to-Target Occupations for Human Services, Southwest Minnesota, 2024Q1

Target Occupations (All HW, HS, HD)
Substance Abuse, Behavioral Disorder, & Mental Health Counselors (OG)
Child, Family, & School Social Workers (OG)
Substitute Teachers, Short-Term
Social & Community Service Managers (OG)
Coaches & Scouts

Gateway Occupations
Social & Human Service Assistants (HD, AG)
Residential Advisors (AG)
Community & Social Service Specialists, All Other (HS, AG)
First-Line Supervisors of Personal Service Workers (HD, OG, AG)
Tutors (HS)

Origin Occupations
Personal Care Aides (HD, AG)
Teaching Assistants, Except Postsecondary (HS, HD)
Childcare Workers (AG)
Preschool Teachers, Except Special Education (HS, HD, OG)
Firefighters (HS, OG, AG)

HW = High-Wage; HS=High-Skill; HD=High-Demand; OG=Occupation Gaps; AG=Award Gaps

Other Promising Occupations

Another Human Services occupation that is high-wage and high-demand, yet does not meet the high-skill threshold to be considered a Target Occupation, may be a promising career for students to consider. This occupation may offer a fast track to a good job for those interested in starting a career in the field without requiring a postsecondary credential. The occupation to consider is:

- First-Line Supervisors of Entertainment & Recreation Workers, Except Gambling Services (OG)

Featured Pathway

The Social Services pathway remains a strong pathway to explore in the Southwest region. The Target occupation of Social and Community Service Manager is highly concentrated in the Southwest region with a location quotient of 1.6, a slight increase over 2023. This role is in high demand and currently experiencing an occupation gap. Social and Human Service Assistants, also highly concentrated locally (LQ 1.33), is a potential Gateway occupation that could feed into this role. It is also in high demand and faces an award gap. Childcare Workers face award gaps, too, and are highly concentrated locally in the region (LQ 1.19). Forecast employment growth coupled with replacement demand due to retirement and insufficient graduate supply make this an important pathway to explore.

RealTime Talent

Origin

Target

Childcare Workers (AG)

Social & Human Service Assistants (HD, AG)

Social & Community Service Managers (HW, HW, HD, OG)

RealTime Talent
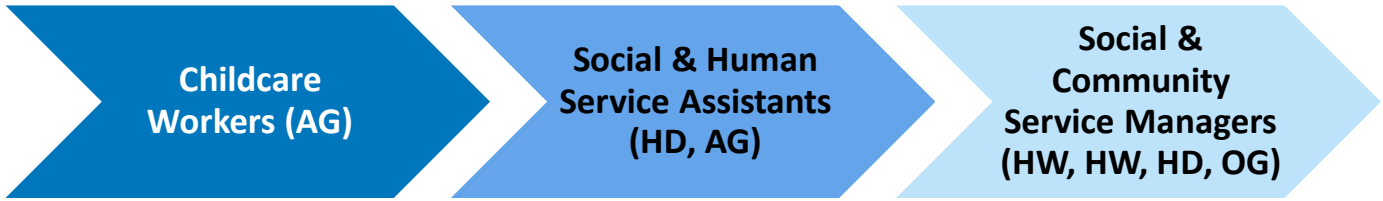
OGT Wages and Experience Level Requirements, Human Services, Southwest Minnesota, 2024Q1

	SOC	Occupation	Empl	Mean	Entry Level	Experienced	10%	25%	50% Median	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Target	21-1018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	815	$55,100	$43,000	$61,100	$40,000	$48,300	$53,900	$63,000	$68,300	BA	None	None
	21-1021	Child, Family, and School Social Workers	799	$65,900	$47,600	$75,100	$45,400	$52,800	$63,100	$80,500	$89,900	BA	None	None
	25-3031	Substitute Teachers, Short-Term	770	$60,100	$34,900	$72,700	$33,300	$39,200	$59,700	$69,700	$81,500	BA	None	None
	11-9151	Social and Community Service Managers	581	$82,900	$57,100	$95,800	$55,700	$62,200	$78,200	$97,400	$123,700	BA	< 5 years	None
	27-2022	Coaches and Scouts	444	$57,800	$29,600	$71,900	$26,800	$33,300	$50,200	$71,600	$94,000	BA	None	None
Gateway	21-1093	Social and Human Service Assistants	1,139	$48,300	$37,600	$53,600	$36,200	$40,900	$47,600	$55,200	$62,100	HS/GED	None	Short-term OJT
	39-9041	Residential Advisors	389	$46,600	$39,900	$50,000	$38,500	$42,500	$45,800	$49,400	$58,400	HS/GED	None	Short-term OJT
	21-1099	Community and Social Service Specialists, All Other	340	$51,800	$35,000	$60,100	$32,500	$39,700	$48,800	$61,700	$75,100	BA	None	None
	39-1022	First-Line Supervisors of Personal Service Workers	285	$49,100	$36,700	$55,400	$35,000	$40,300	$46,700	$54,900	$69,000	HS/GED	< 5 years	None
	25-3041	Tutors	216	$49,100	$37,900	$54,800	$37,000	$40,400	$47,000	$58,000	$64,000	Some college	None	None
Origin	31-1122	Personal Care Aides	6,385	$35,800	$30,600	$38,400	$29,800	$32,400	$36,000	$38,200	$41,100	HS/GED	None	Short-term OJT
	25-9045	Teaching Assistants, Except Postsecondary	4,052	$38,300	$31,500	$41,700	$30,600	$33,600	$38,200	$40,300	$48,000	Some college	None	None
	39-9011	Childcare Workers	1,953	$31,000	$26,000	$33,500	$25,300	$27,100	$30,500	$33,000	$37,400	HS/GED	None	Short-term OJT
	25-2011	Preschool Teachers, Except Special Education	1,296	$42,000	$32,300	$46,900	$31,100	$34,900	$39,100	$46,500	$58,600	AS	None	None
	33-2011	Firefighters	713	$44,000	$29,100	$51,500	$27,600	$31,800	$41,100	$45,900	$73,000	Certificate	None	Long-term OJT

Arts, Communications, and Information Systems

Arts, Communications, and Information Systems is a diverse career field with artistic careers as well as Information Technology career paths. The specific career clusters included in this field are:

- Arts, Audio/Video Technology, and Communications
- Information Technology

EMPLOYMENT FORECAST

Over the next five years, Arts, Communications, and Information Systems Field employment is forecast to decline by -0.5% annually, continuing a downward trend that began in early 2023.

Baseline 5-Year Forecast for Arts, Communications, and Information Systems Careers, Southwest Minnesota, 2024Q1
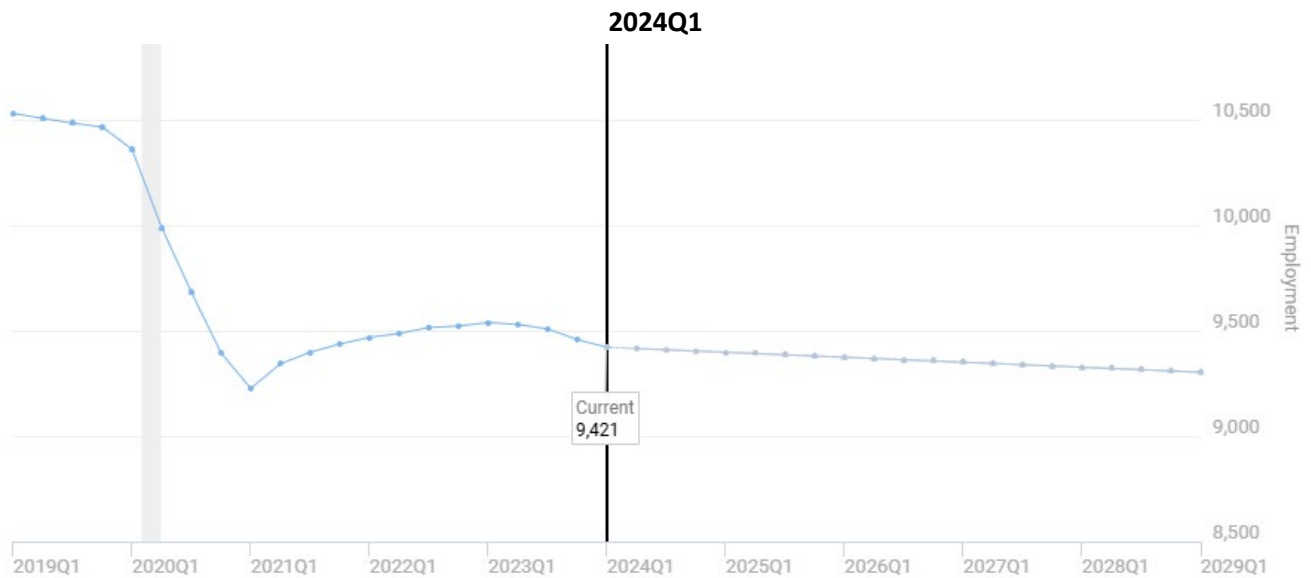
TOP OCCUPATIONS

A total of 9,421 people are employed in Arts, Communications, and Information Systems roles regionally, accounting for about 3% of all regional employment. This is the smallest CTE Career Field in the Southwest region. While the field's median wage is high at $70,800, the career field has a low concentration in the region (LQ 0.64). Top occupations related to printing and publishing are forecast to shrink over the next five years, including Printing Press Operators, Prepress Technicians and Workers, and Print Binding and Finishing Workers.

Top Ten Arts, Communications, and Information Systems Occupations by Employment Volume, Southwest Minnesota, 2024Q1

6-Digit Occupation	Empl	Median Wages	LQ	Historical 5-Year Empl Change	Forecast 5-Year Demand	Forecast Annual Change
Software Developers	1,329	$106,400	0.42	-27	459	1.3%
Printing Press Operators	937	$40,800	3.13	-210	373	-1.8%
Computer User Support Specialists	775	$61,600	0.54	-14	221	-0.7%
Computer Systems Analysts	618	$103,800	0.60	-60	173	-0.1%
Graphic Designers	573	$51,200	1.08	-23	196	-0.8%
Computer Network Support Specialists	410	$75,200	1.19	-21	124	-0.4%
Network and Computer Systems Administrators	326	$91,600	0.49	-36	74	-0.8%
Musicians and Singers	288	$89,700	0.84	-55	174	-0.5%
Prepress Technicians and Workers	283	$43,700	5.70	-125	111	-3.1%
Print Binding and Finishing Workers	281	$44,000	3.56	-73	81	-2.6%
Arts, Communications, & Information Systems (CTE Field)	**9,421**	**$70,800**	**0.64**	**-1,109**	**3,384**	**-0.5%**

"Forecast 5-Year Demand" is the projected need for new entrants into an occupation over the next five years. New entrants are needed due to expected growth and to replace workers who left the occupation due to factors such as retirement or switching careers.
"Forecast Annual Change" is the expected baseline (most pessimistic) yearly change in employment due to national, long-term trend projections (per the BLS) as well as local factors such as industry mix, labor force participation rates, and population growth (as computed and modeled by RealTime Talent in JobsEQ).

TOP INDUSTRIES

The largest share of talent in the Southwest working in Arts, Communications, and Information Systems roles are employed in Printing and Related Support Activities (15.9%). Aside from Printing, employment in this field is relatively spread out across a number of different industries.

Arts, Communications, and Information Systems Field Employment by Industry, Southwest Minnesota, 2024Q1

Industry Title	% of Career Field Empl	Career Field Empl	10-Year Separations	10-Year Empl Change	10-Year Total Demand
Printing and Related Support Activities	15.9%	1,494	1,353	-308	1,045
Wired and Wireless Telecommunications (except Satellite)	4.6%	435	345	-19	326
Management of Companies and Enterprises	4.5%	421	265	28	292
Religious Organizations	4.2%	392	403	-21	382
Newspaper, Periodical, Book, and Directory Publishers	3.9%	371	321	-49	272
Independent Artists, Writers, and Performers	3.9%	367	357	-3	354
Depository Credit Intermediation	3.7%	349	203	14	217
Computer Systems Design and Related Services	3.5%	332	203	36	239
Colleges, Universities, and Professional Schools	2.5%	232	160	-1	159
Executive, Legislative, and Other General Government Support	2.4%	224	140	-7	132
Radio and Television Broadcasting Stations	2.2%	210	174	-50	123
Elementary and Secondary Schools	2.1%	199	126	-17	109
Other Professional, Scientific, and Technical Services	2.1%	194	163	0	163
Other Miscellaneous Manufacturing	1.9%	179	138	-6	132
General Medical and Surgical Hospitals	1.5%	142	85	-4	81
Web Search Portals, Libraries, Archives, and Other Information Services	1.3%	121	75	24	100
Converted Paper Product Manufacturing	1.3%	120	111	-16	95
Advertising, Public Relations, and Related Services	1.2%	110	96	4	100
Architectural, Engineering, and Related Services	1.1%	103	63	5	68
Employment Services	1.1%	99	64	-2	62
All Others	35.3%	3,329	2,384	-37	2,347

CAREER FIELD DEMOGRAPHICS

- The Arts, Communications, and Information Systems field in Southwest Minnesota has an overrepresentation of male (70.3%) and Asian talent (4.6%) compared to the overall workforce
- Compared to the regional workforce overall, Southwest Minnesota has a greater share its workforce in the prime working age range between 25 and 54 years of age (by 10.7 percentage points), and a smaller share in the youngest and oldest age cohorts

Age
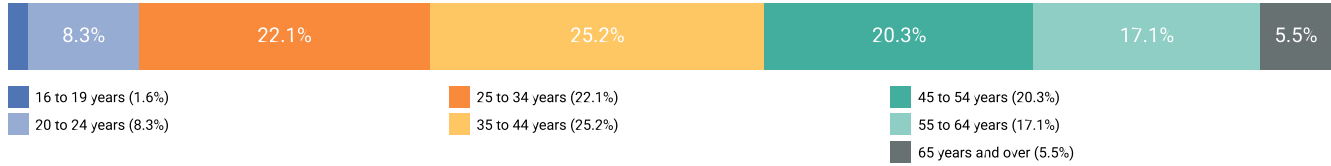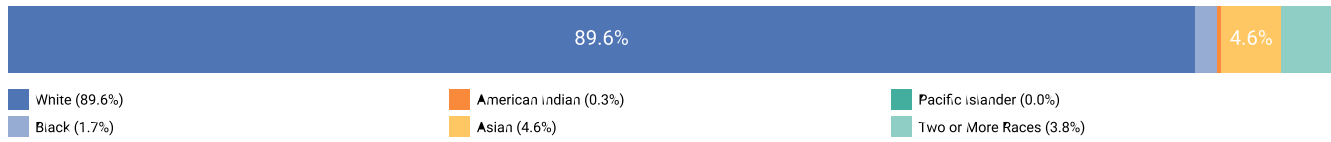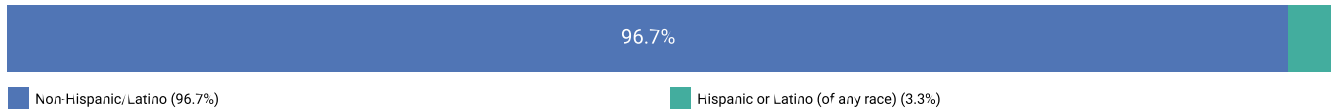
8.3%	22.1%	25.2%	20.3%	17.1%	5.5%

- 16 to 19 years (1.6%)
- 20 to 24 years (8.3%)
- 25 to 34 years (22.1%)
- 35 to 44 years (25.2%)
- 45 to 54 years (20.3%)
- 55 to 64 years (17.1%)
- 65 years and over (5.5%)

Race

89.6%	4.6%	

- White (89.6%)
- Black (1.7%)
- American Indian (0.3%)
- Asian (4.6%)
- Pacific Islander (0.0%)
- Two or More Races (3.8%)

Ethnicity

96.7%	

- Non-Hispanic/Latino (96.7%)
- Hispanic or Latino (of any race) (3.3%)

Gender

70.3%	29.7%

- Male (70.3%)
- Female (29.7%)

EDUCATIONAL ATTAINMENT AND REQUIREMENTS

The charts below illustrate the estimated educational attainment of current workers in this career field, followed by the typical education and training requirements in the field.

- The Southwest Minnesota Arts, Communications, and Information Systems workforce is fairly aligned in educational attainment to the requirements in the field, with high overall educational attainment requirements
  - o Over half (56.3%) of positions require a bachelor's degree, while a similar share of the workforce (54.9%) hold a bachelor's degree or higher

Educational Attainment
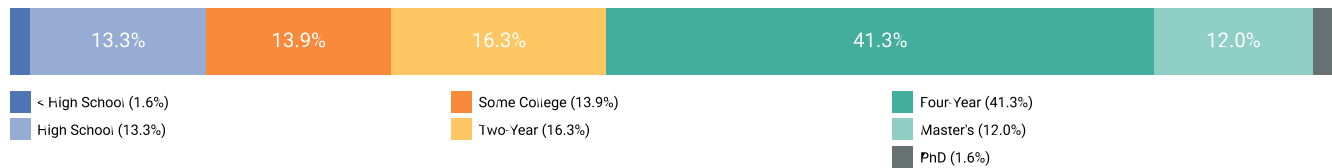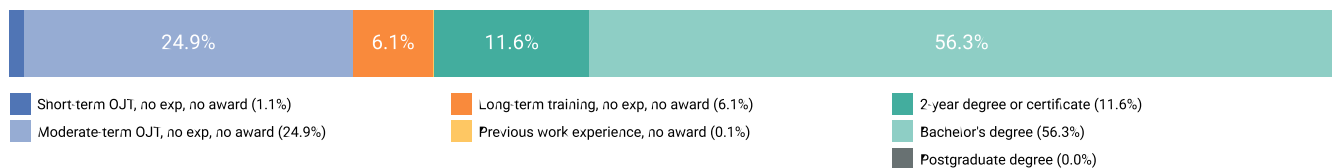
13.3%	13.9%	16.3%	41.3%	12.0%	

- < High School (1.6%)
- High School (13.3%)
- Some College (13.9%)
- Two-Year (16.3%)
- Four-Year (41.3%)
- Master's (12.0%)
- PhD (1.6%)

Education and Training Requirements

24.9%	6.1%	11.6%	56.3%

- Short-term OJT, no exp, no award (1.1%)
- Moderate-term OJT, no exp, no award (24.9%)
- Long-term training, no exp, no award (6.1%)
- Previous work experience, no award (0.1%)
- 2-year degree or certificate (11.6%)
- Bachelor's degree (56.3%)
- Postgraduate degree (0.0%)

OCCUPATION GAPS

The chart below shows the potential average annual talent shortages over ten years.

Software Developers are the top occupation of shortage in this field, falling short at least 17 skilled workers needed annually (averaged over the next ten years) to meet employer demand. This moderate talent shortage is primarily due to employment growth which is outpacing the growth in supply of trained software professionals in this region. The Computer Systems Analyst role has the second greatest forecasted shortage followed by Information Security Analysts. Talent surplus estimates are concentrated around careers central to the printing industry.

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Arts, Communications, and Information Systems, Southwest Minnesota, 2024Q1

Supply Deficit		Supply Surplus	
Software Developers ($108,400)	−17	Print Binding and Finishing Workers ($45,000)	3
Computer Systems Analysts ($106,500)	−3	Prepress Technicians and Workers ($43,500)	3
Information Security Analysts ($115,700)	−2	Printing Press Operators ($46,000)	3
Web Developers ($96,300)	−1	Graphic Designers ($55,500)	1
Software Quality Assurance Analysts and Testers ($95,800)	−1	Editors ($54,000)	1
Photographers ($44,900)	−1	Computer Programmers ($98,800)	1
Telecommunications Line Installers and Repairers ($59,300)	−1	Floral Designers ($33,800)	1
Telecommunications Equipment Installers and Repairers, Except Line Installers ($63,500)	−1	Broadcast Announcers and Radio Disc Jockeys ($38,300)	1
Computer Network Support Specialists ($77,400)	−1		
Computer Occupations, All Other ($87,800)	−1		

AWARD GAPS

The chart below shows the shortfall of new postsecondary graduates needed to meet local demand, benchmarked against national average volumes of graduates in the 2022-23 school year.

The Southwest is underproducing graduates in several Arts, Communications, and Information Systems programs in addition to showing some general misalignments:
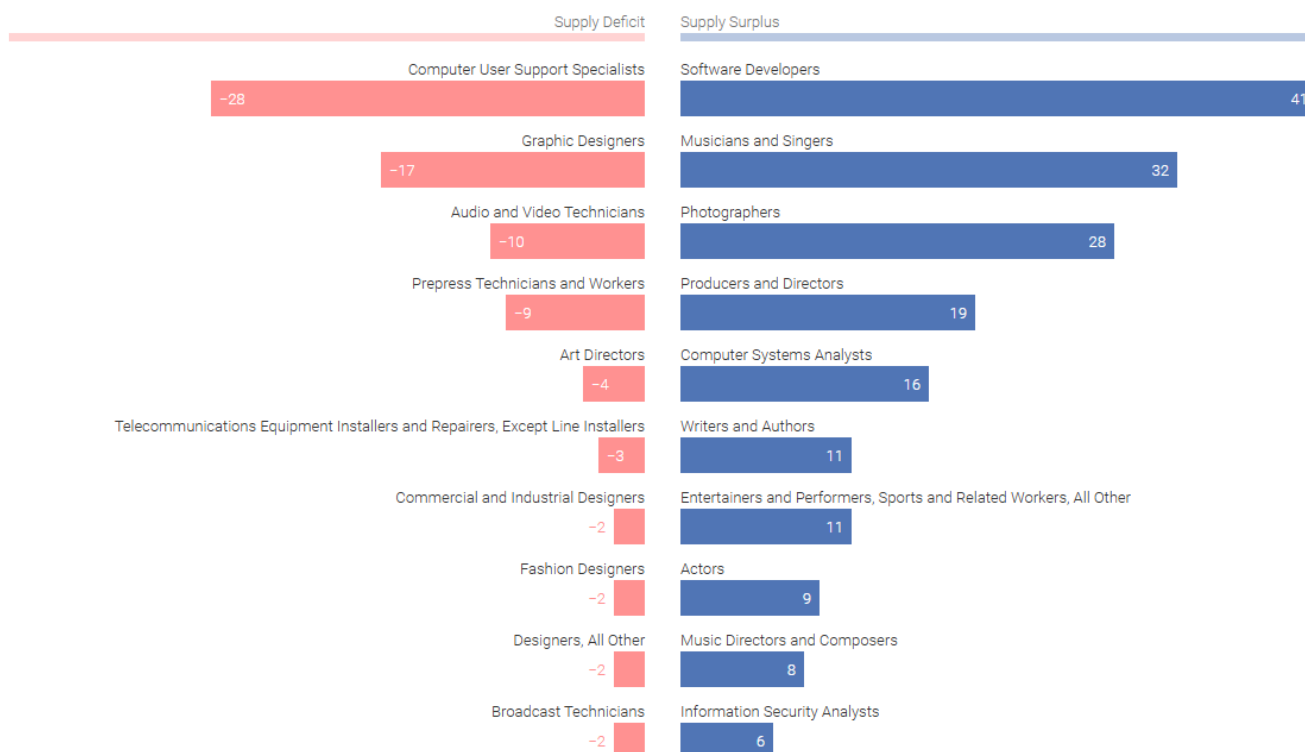
- Many occupations in the field have an undersupply of postsecondary completions compared to national rates, including Computer User Support Specialist, Graphic Design, and Audio and Video Technician graduates
- In contrast, postsecondary institutions in Southwest Minnesota have an oversupply of Software Developers, as well as Musicians and Singers postsecondary graduates compared with the national average that are likely helping fill shortages in the region and across the state

Award Gaps in Arts, Communications, and Information Systems, Southwest Minnesota, 2024Q1

Supply Deficit		Supply Surplus	
Computer User Support Specialists	−28	Software Developers	41
Graphic Designers	−17	Musicians and Singers	32
Audio and Video Technicians	−10	Photographers	28
Prepress Technicians and Workers	−9	Producers and Directors	19
Art Directors	−4	Computer Systems Analysts	16
Telecommunications Equipment Installers and Repairers, Except Line Installers	−3	Writers and Authors	11
Commercial and Industrial Designers	−2	Entertainers and Performers, Sports and Related Workers, All Other	11
Fashion Designers	−2	Actors	9
Designers, All Other	−2	Music Directors and Composers	8
Broadcast Technicians	−2	Information Security Analysts	6

ORIGIN, GATEWAY, AND TARGET OCCUPATIONS

This section offers an Origin-to-Gateway-to-Target model analysis for how to help move students from entry points into their field of interest into both likely and other aligned careers, considering automation, remote work, and the changing work environment.

Origin-to-Gateway-to-Target Occupations for Arts, Communications, and Information Systems, Southwest Minnesota, 2024Q1

Target Occupations (All HW, HS, HD)
Software Developers (OG)
Web & Digital Interface Designers (OG)
Web Developers (OG)
Makeup Artists, Theatrical & Performance

Gateway Occupations
Actors (HS)
Fine Artists Incl. Painters, Sculptors & Illustrators (HS)
Entertainers & Performers, Sports & Related Workers, All Other (HD)
Proofreaders & Copy Makers (HS)
Agents & Business Managers of Artists, Performers, & Athletes (HS, HD, AG)

Origin Occupations
Printing Press Operators (AG)
Prepress Technicians & Workers (HS, AG)
Print Binding & Finishing Workers
Photographers (OG)
Broadcast Announcers & Radio Disc Jockeys (HS)

HW = High-Wage; HS=High-Skill; HD=High-Demand; OG=Occupation Gaps; AG=Award Gaps

Featured Pathway

With a projected occupation gap, high wages, and high demand, the occupations of Web and Digital Interface Designer and Web Developer are promising pathways to explore in the Southwest region. The gateway occupation of Proofreaders and Copy makers has a location quotient of 1.07 and could be a potential entry point. The Origin occupations of Photographer (LQ 0.83) and Prepress Technicians and Workers (LQ 5.7) are potential feeder occupations for Web and Digital Interface Designers or Web Developers, recognizing the need for specialized training for these Information Technology careers.

Origin	Gateway	Target
Photographers (OG) **Prepress Technicians & Workers (HS,AG)**	**Proofreaders & Copymakers (HS)**	**Web & Digital interface Designers (HW, HS, HD, OG)** **Web Developers (OG)**

RealTime Talent

OGT Wages and Experience Level Requirements, Arts, Communications, and Information Systems, Southwest Minnesota, 2024Q1

	SOC	Occupation	Empl	Mean	Entry Level	Experienced	10%	25%	50% Median	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Target	15-1252	Software Developers	1,329	$108,400	$76,100	$124,600	$73,000	$84,900	$106,400	$129,700	$143,000	BA	None	None
	15-1255	Web and Digital Interface Designers	113	$77,900	$46,000	$93,900	$43,300	$53,100	$72,200	$96,000	$122,200	BA	None	None
	15-1254	Web Developers	109	$96,300	$61,200	$113,800	$57,000	$71,000	$89,400	$120,700	$152,500	BA	None	None
	39-5091	Makeup Artists, Theatrical and Performance	3	$68,100	$25,500	$89,500	$24,600	$25,900	$51,500	$104,600	$143,200	Certificate	None	None
Gateway	27-2011	Actors	55	$66,300	$31,000	$84,000	$27,400	$35,900	$45,400	$53,000	$81,300	Some college	None	Long-term OJT
	27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators	33	$54,700	$35,300	$64,400	$31,900	$41,000	$47,700	$69,400	$87,500	BA	None	Long-term OJT
	27-2099	Entertainers and Performers, Sports and Related Workers, All Other	33	$43,200	$29,200	$50,200	$28,500	$31,500	$48,100	$49,100	$56,800	None	None	Short-term OJT
	43-9081	Proofreaders and Copy Markers	15	$46,900	$39,400	$50,700	$36,500	$44,300	$47,500	$48,000	$55,400	BA	None	None
	13-1011	Agents and Business Managers of Artists, Performers, and Athletes	7	$74,700	$43,500	$90,300	$41,200	$47,100	$47,800	$98,900	$170,700	BA	< 5 years	None
Origin	51-5112	Printing Press Operators	937	$46,000	$36,700	$50,700	$36,200	$38,000	$40,800	$51,800	$63,200	HS/GED	None	Mod-term OJT
	51-5111	Prepress Technicians and Workers	283	$43,500	$32,800	$48,800	$31,500	$35,900	$43,700	$52,600	$54,500	Certificate	None	None
	51-5113	Print Binding and Finishing Workers	281	$45,000	$36,100	$49,500	$36,400	$37,100	$44,000	$52,400	$55,400	HS/GED	None	Mod-term OJT
	27-4021	Photographers	240	$44,900	$27,800	$53,500	$26,900	$29,800	$36,700	$55,200	$82,500	HS/GED	None	Mod-term OJT
	27-3011	Broadcast Announcers and Radio Disc Jockeys	126	$38,300	$25,300	$44,800	$23,800	$26,900	$33,300	$44,000	$53,300	BA	None	None

Business, Management, and Administration

Business, Management, and Administration is a diverse career field with the following career clusters:

- Hospitality and Tourism
- Finance
- Marketing
- Business, Management, and Administration

EMPLOYMENT FORECAST

Over the next five years, Business, Management, and Administration Field employment is forecast to decline by -0.8%, intensifying the overall five-year historical trend of declining employment for the field.

Baseline 5-Year Forecast for Business, Management, and Administration Careers, Southwest Minnesota 2024Q1
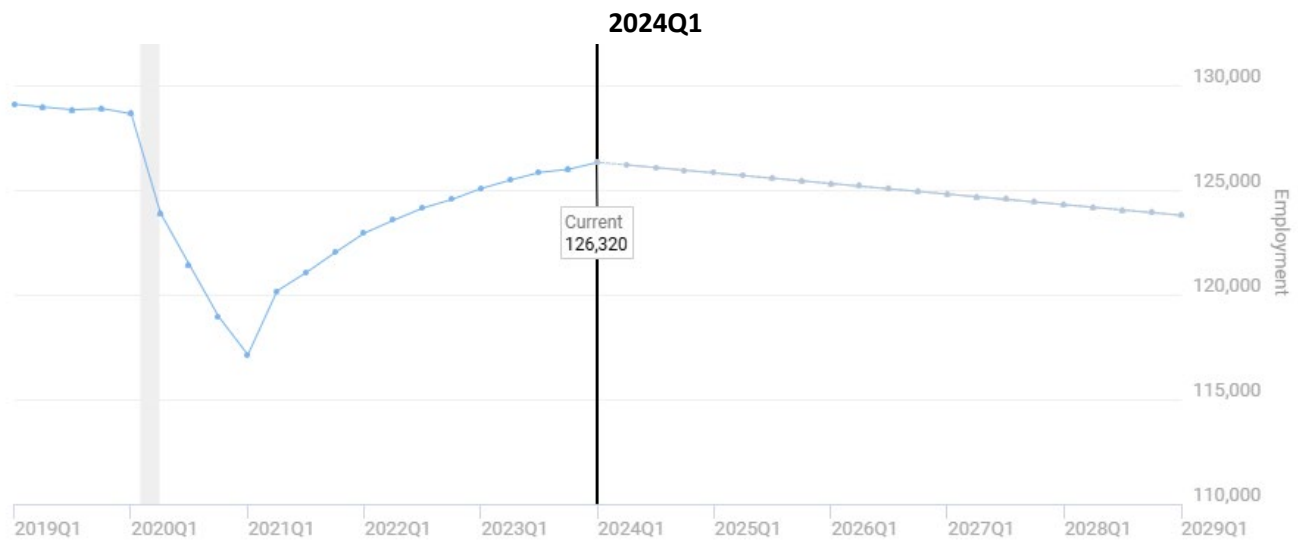
TOP OCCUPATIONS

A total of 126,320 people are employed in Business, Management and Administration Systems roles regionally, accounting for about 39% of all regional employment. All of the top ten occupations are forecast to decline in the next five years.

Top Ten Business, Management, and Administration Systems Occupations by Employment Volume in Southwest Minnesota, 2024Q1

6-Digit Occupation	Empl	Median Wages	LQ	Historical 5-Year Empl Change	Forecast 5-Year Demand	Forecast Annual Change
Cashiers	8,405	$31,000	1.26	-57	6,887	-1.6%
Retail Salespersons	7,403	$35,100	1.00	-680	4,833	-0.9%
General and Operations Managers	6,900	$85,500	0.99	913	2,514	-0.4%
Fast Food and Counter Workers	6,469	$30,400	0.94	-168	6,987	-0.6%
Office Clerks, General	5,365	$43,600	1.02	-470	2,616	-1.4%
Stockers and Order Fillers	4,885	$38,200	0.86	348	3,871	-0.1%
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	4,667	$37,700	0.98	43	3,029	-0.6%
Customer Service Representatives	4,482	$43,800	0.77	-78	2,469	-1.5%
Waiters and Waitresses	3,536	$24,000	0.79	-269	3,357	-0.9%
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	3,446	$47,500	0.86	-210	1,432	-1.9%
Business, Management, & Administration (CTE Field)	**126,320**	**$51,700**	**0.88**	**-2,773**	**74,049**	**-0.8%**

"Forecast 5-Year Demand" is the projected need for new entrants into an occupation over the next five years. New entrants are needed due to expected growth and to replace workers who left the occupation due to factors such as retirement or switching careers.

"Forecast Annual Change" is the expected baseline (most pessimistic) yearly change in employment due to national, long-term trend projections (per the BLS) as well as local factors such as industry mix, labor force participation rates, and population growth (as computed and modeled by RealTime Talent in JobsEQ).

TOP INDUSTRIES

In the Southwest, the industry with the greatest share of Business, Management, and Administration talent and greatest forecast demand is Restaurants (13.4%). Beyond Restaurants, employment is relatively spread out across different industries, many of which have demand over the next 10 years that exceeds the size of their current workforce.
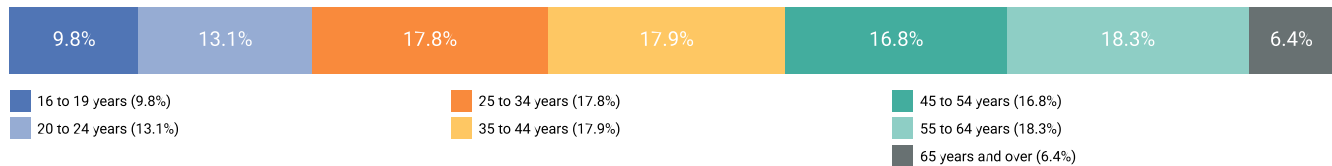
Business, Management, and Administration Field Employment by Industry, Southwest Minnesota, 2024Q1

Industry Title	% of Career Field Empl	Career Field Empl	10-Year Separations	10-Year Empl Change	10-Year Total Demand
Restaurants and Other Eating Places	13.4%	16,952	30,747	-769	29,978
Warehouse Clubs, Supercenters, and Other General Merchandise Retailers	4.3%	5,441	7,803	-553	7,249
Gasoline Stations	4.2%	5,252	8,508	-674	7,834
Grocery and Convenience Retailers	3.9%	4,921	7,603	-431	7,171
Depository Credit Intermediation	3.2%	3,991	3,299	-363	2,936
Elementary and Secondary Schools	2.4%	2,994	3,717	-370	3,347
Executive, Legislative, and Other General Government Support	2.3%	2,864	3,228	-270	2,957
Building Material and Supplies Dealers	2.0%	2,540	3,442	-138	3,304
Nursing Care Facilities (Skilled Nursing Facilities)	1.9%	2,359	3,215	-290	2,925
Traveler Accommodation	1.9%	2,354	3,418	-122	3,296
Management of Companies and Enterprises	1.6%	2,070	1,865	8	1,873
Services to Buildings and Dwellings	1.6%	2,054	2,625	-113	2,511
General Medical and Surgical Hospitals	1.4%	1,817	2,101	-154	1,947
Automobile Dealers	1.3%	1,630	1,875	-123	1,751
Machinery, Equipment, and Supplies Merchant Wholesalers	1.3%	1,615	1,530	-232	1,298
Religious Organizations	1.3%	1,606	1,675	-167	1,509
Agencies, Brokerages, and Other Insurance Related Activities	1.3%	1,601	1,390	-32	1,358
Other Amusement and Recreation Industries	1.2%	1,545	2,787	17	2,805
Drinking Places (Alcoholic Beverages)	1.1%	1,437	2,358	-72	2,286
Miscellaneous Nondurable Goods Merchant Wholesalers	1.1%	1,369	1,328	-185	1,143
All Others	47.4%	59,907	63,395	-4,585	58,810

CAREER FIELD DEMOGRAPHICS

- Southwest Minnesota's Business, Management, and Administration field has a slight overrepresentation of talent that identify with two or more races (by 0.4 percentage points)
- Compared to the overall regional workforce demographics, Southwest Minnesota's Business, Management, and Administration workforce is younger, with about 22.9% of the workforce between the ages of 16 and 24 years, compared to 16.6% in the age cohort within the regional workforce overall

Age
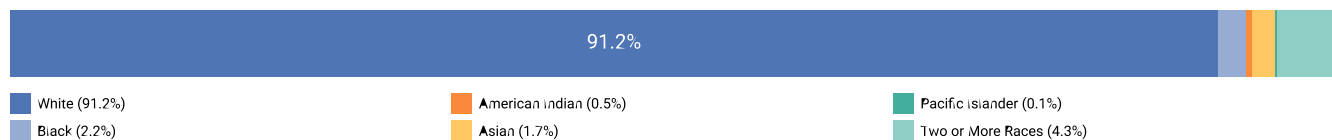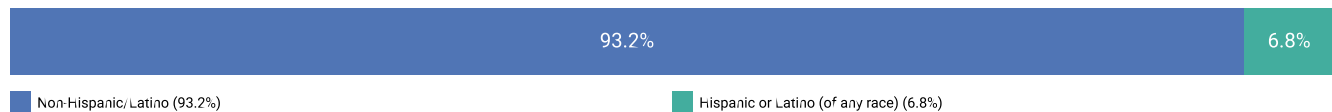
9.8%	13.1%	17.8%	17.9%	16.8%	18.3%	6.4%

- 16 to 19 years (9.8%)
- 20 to 24 years (13.1%)
- 25 to 34 years (17.8%)
- 35 to 44 years (17.9%)
- 45 to 54 years (16.8%)
- 55 to 64 years (18.3%)
- 65 years and over (6.4%)

Race

91.2%		

- White (91.2%)
- Black (2.2%)
- American Indian (0.5%)
- Asian (1.7%)
- Pacific Islander (0.1%)
- Two or More Races (4.3%)

Ethnicity

93.2%	6.8%

- Non-Hispanic/Latino (93.2%)
- Hispanic or Latino (of any race) (6.8%)

Gender

43.3%	56.7%

- Male (43.3%)
- Female (56.7%)

EDUCATIONAL ATTAINMENT AND REQUIREMENTS

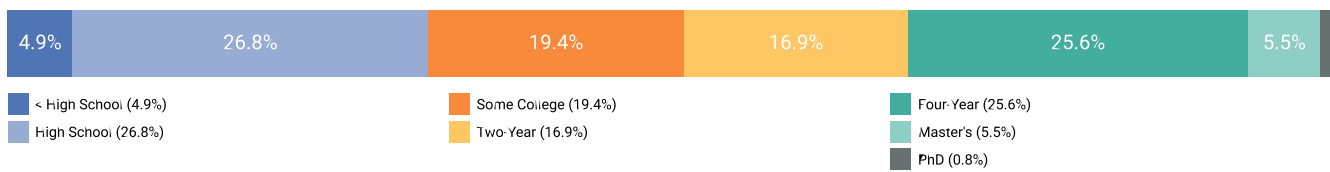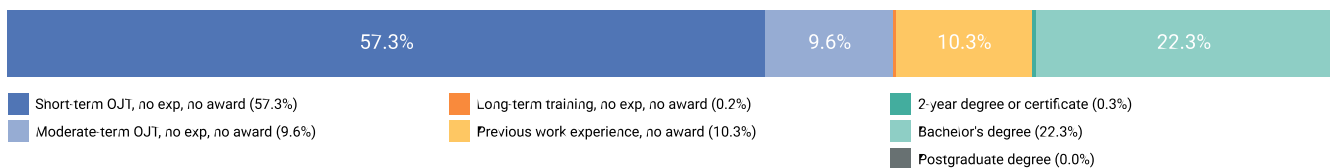The charts below illustrate the estimated educational attainment of current workers in this career field, followed by the typical education and training requirements in the field.

- The Southwest Minnesota Business, Management, and Administration workforce is more highly educated relative to the requirements in the field—evidence that there may be a significant number of underemployed workers in this field regionally
  - About three in ten (31.9%) of Business, Management, and Administration talent working in the region have a bachelor's degree or higher, while only 22.3% of roles in the field regionally require a bachelor's degree
  - Very few positions require a two-year degree or certificate (0.3%), while 16.9% of the workforce holds a two-year degree and an addition 19.4% have some college

Educational Attainment

4.9%	26.8%	19.4%	16.9%	25.6%	5.5%	

- < High School (4.9%)
- High School (26.8%)
- Some College (19.4%)
- Two-Year (16.9%)
- Four-Year (25.6%)
- Master's (5.5%)
- PhD (0.8%)

Education and Training Requirements

57.3%	9.6%	10.3%	22.3%

- Short-term OJT, no exp, no award (57.3%)
- Moderate-term OJT, no exp, no award (9.6%)
- Long-term training, no exp, no award (0.2%)
- Previous work experience, no award (10.3%)
- 2-year degree or certificate (0.3%)
- Bachelor's degree (22.3%)
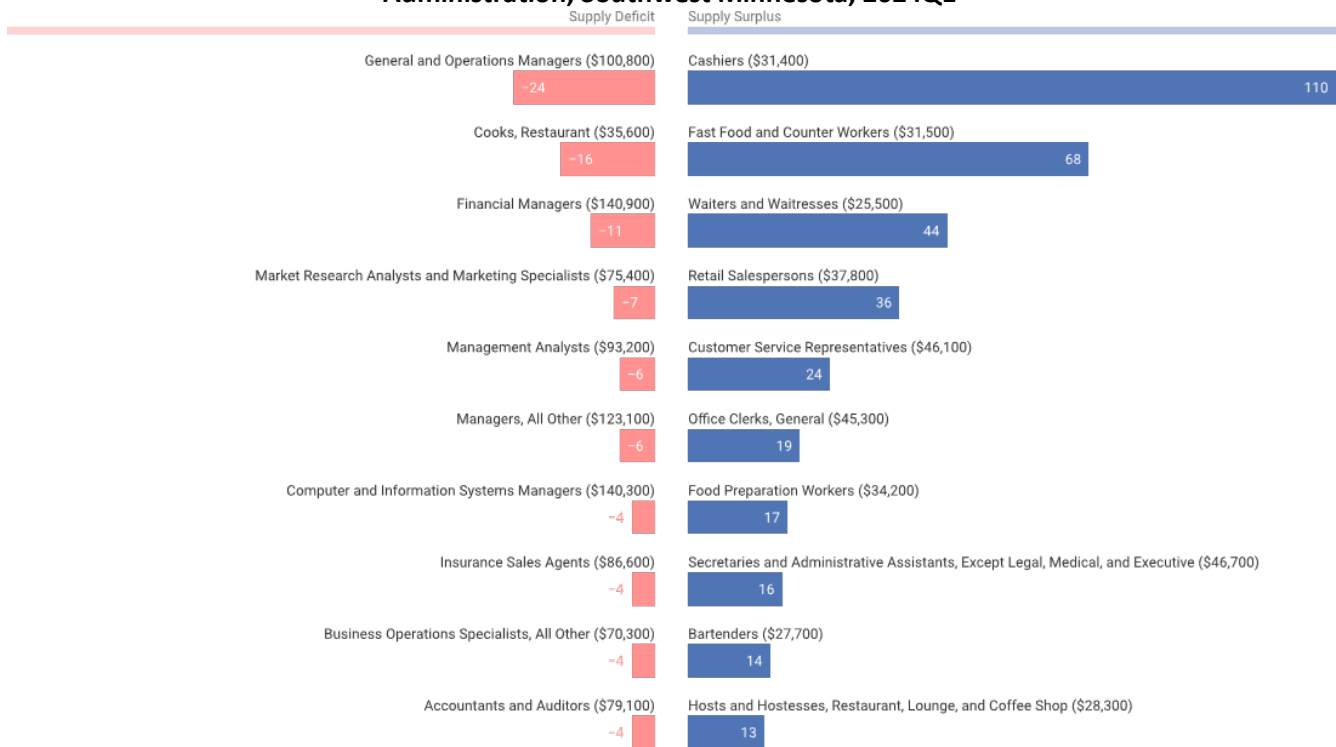- Postgraduate degree (0.0%)

OCCUPATION GAPS

The chart below shows the potential average annual talent shortages over ten years.

Many management roles indicate significant shortages in the years ahead, for example, the General and Operations Manager talent pool in this region will likely fall short at least 24 skilled workers needed annually to meet employer demand. Volumes of talent surplus are larger in magnitude than the shortages in this field for Southwest Minnesota.

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Business, Management, and Administration, Southwest Minnesota, 2024Q1

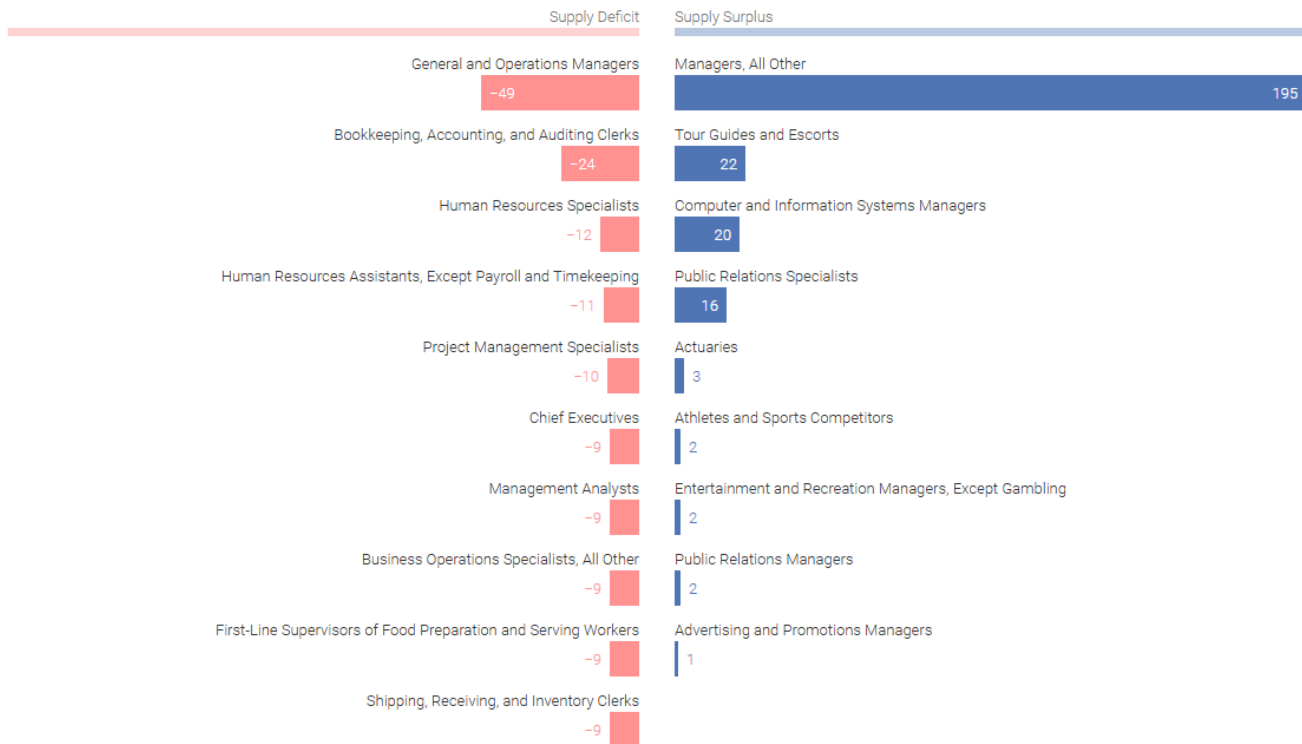| Supply Deficit		Supply Surplus	
General and Operations Managers ($100,800)	−24	Cashiers ($31,400)	110
Cooks, Restaurant ($35,600)	−16	Fast Food and Counter Workers ($31,500)	68
Financial Managers ($140,900)	−11	Waiters and Waitresses ($25,500)	44
Market Research Analysts and Marketing Specialists ($75,400)	−7	Retail Salespersons ($37,800)	36
Management Analysts ($93,200)	−6	Customer Service Representatives ($46,100)	24
Managers, All Other ($123,100)	−6	Office Clerks, General ($45,300)	19
Computer and Information Systems Managers ($140,300)	−4	Food Preparation Workers ($34,200)	17
Insurance Sales Agents ($86,600)	−4	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive ($46,700)	16
Business Operations Specialists, All Other ($70,300)	−4	Bartenders ($27,700)	14
Accountants and Auditors ($79,100)	−4	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop ($28,300)	13

AWARD GAPS

The chart below shows the shortfall of new postsecondary graduates needed to meet local demand, benchmarked against national average volumes of graduates in the 2022-23 school year.

Southwest Minnesota faces several shortages in Business, Management and Administration awards:

- Most notably, regional colleges and universities are underproducing around 49 graduates annually that are needed to fill General and Operations Manager positions, followed by shortages of Bookkeeping, Accounting, and Auditing Clerks (-24)
- While Southwest Minnesota is overproducing graduates in only nine occupations, the most notable surplus is of Managers, All Other (+195)

Award Gaps in Business, Management, and Administration, Southwest Minnesota, 2024Q1

Supply Deficit		Supply Surplus	
General and Operations Managers	−49	Managers, All Other	195
Bookkeeping, Accounting, and Auditing Clerks	−24	Tour Guides and Escorts	22
Human Resources Specialists	−12	Computer and Information Systems Managers	20
Human Resources Assistants, Except Payroll and Timekeeping	−11	Public Relations Specialists	16
Project Management Specialists	−10	Actuaries	3
Chief Executives	−9	Athletes and Sports Competitors	2
Management Analysts	−9	Entertainment and Recreation Managers, Except Gambling	2
Business Operations Specialists, All Other	−9	Public Relations Managers	2
First-Line Supervisors of Food Preparation and Serving Workers	−9	Advertising and Promotions Managers	1
Shipping, Receiving, and Inventory Clerks	−9		

ORIGIN, GATEWAY, AND TARGET OCCUPATIONS

This section offers an Origin-to-Gateway-to-Target model analysis for how to help move students from entry points into their field of interest into both likely and other aligned careers, considering automation, remote work, and the changing work environment.

Origin-to-Gateway-to-Target Occupations for Business, Management, and Administration, Southwest Minnesota, 2024Q1

Target Occupations (All HW, HS, HD, OG)
Accountants & Auditors
Human Resources Specialists (AG)
Financial Managers
Management Analysts (AG)
Computer & Information Systems Managers

Gateway Occupations
Secretaries & Administrative Assistants (HD, AG)
First-Line Supervisors of Retail Sales Workers (HD, AG)
Bookkeeping, Accounting, & Auditing Clerks (HS, AG)
Billing & Posting Clerks
Office & Administrative Support Workers, All Other

Origin Occupations
Cashiers (HD)
Retail Salespersons (HD)
Fast Food & Counter Workers (HD)
Office Clerks, General
Stockers & Order Fillers (HD)

HW = High-Wage; HS=High-Skill; HD=High-Demand; OG=Occupation Gaps; AG=Award Gaps

Other Promising Occupations

A number of other Business, Management, and Administration occupations that are high-wage and high-demand, yet do not meet the high-skill threshold to be considered Target Occupations, may be promising careers for students to consider. These occupations may offer a fast track to good jobs for those interested in starting a career in the field without requiring a postsecondary credential. These occupations to consider include:

- Food Service Managers (OG, AG)
- Chefs & Head Cooks (OG)

Featured Pathway

With a projected occupation gap, award gap, and high demand, the Target occupation Human Resources Specialists is a promising pathway to explore in the Southwest region. This occupation is relatively concentrated in the region with a location quotient of 0.76. The Gateway occupation of Office and Administrative Support Workers is also relatively concentrated in the region (LQ 1.02), as is the Origin occupation Office Clerk (LQ of 1.02) These Origin and Gateway occupations have related skillsets appreciated in the Target occupation of Human Resources Specialist, recognizing that this role typically has an education requirement of a bachelor's degree, but that this is a field with multiple pathways and entry points.

Origin

Gateway

Target

| Office Clerks, General | Office & Adminisrtative Support Workers, All Other | Human Resources Specialist (HW, HS, HD, OG, AG) |

RealTime Talent

OGT Wages and Experience Level Requirements, Business, Management, and Administration, Southwest Minnesota, 2024Q1

	SOC	Occupation	Empl	Mean	Entry Level	Experienced	10%	25%	50% Median	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Target	13-2011	Accountants and Auditors	2,380	$79,100	$52,600	$92,400	$50,000	$59,000	$72,100	$89,300	$118,900	BA	None	None
	13-1071	Human Resources Specialists	1,247	$74,200	$51,400	$85,600	$48,000	$58,800	$70,900	$86,100	$104,600	BA	None	None
	11-3031	Financial Managers	1,154	$140,900	$89,800	$166,500	$84,400	$102,400	$126,900	$164,800	$215,800	BA	> 5 years	None
	13-1111	Management Analysts	1,035	$93,200	$62,100	$108,800	$59,000	$69,700	$85,400	$112,200	$132,900	BA	< 5 years	None
	11-3021	Computer and Information Systems Managers	478	$140,300	$93,700	$163,600	$86,800	$108,200	$130,900	$166,900	$203,200	BA	> 5 years	None
Gateway	43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	3,446	$46,700	$35,200	$52,400	$32,700	$39,900	$47,500	$52,200	$60,100	HS/GED	None	Short-term OJT
	41-1011	First-Line Supervisors of Retail Sales Workers	3,142	$48,800	$36,600	$54,900	$35,800	$39,100	$46,000	$53,700	$64,600	HS/GED	< 5 years	None
	43-3031	Bookkeeping, Accounting, and Auditing Clerks	3,015	$49,400	$36,800	$55,700	$35,200	$40,600	$48,300	$56,200	$64,700	Some college	None	Mod-term OJT
	43-3021	Billing and Posting Clerks	525	$49,400	$41,100	$53,500	$40,100	$43,500	$48,500	$53,900	$61,000	HS/GED	None	Mod-term OJT
	43-9199	Office and Administrative Support Workers, All Other	402	$46,800	$33,900	$53,300	$31,400	$38,300	$45,700	$50,000	$62,900	HS/GED	None	Short-term OJT
Origin	41-2011	Cashiers	8,405	$31,400	$26,900	$33,600	$25,600	$28,900	$31,000	$34,800	$36,200	None	None	Short-term OJT
	41-2031	Retail Salespersons	7,403	$37,800	$28,000	$42,700	$26,900	$30,100	$35,100	$38,400	$50,200	None	None	Short-term OJT
	35-3023	Fast Food and Counter Workers	6,469	$31,500	$26,800	$33,900	$25,100	$29,200	$30,400	$35,800	$37,200	None	None	Short-term OJT
	43-9061	Office Clerks, General	5,365	$45,300	$32,700	$51,600	$30,400	$36,900	$43,600	$52,100	$62,900	HS/GED	None	Short-term OJT
	53-7065	Stockers and Order Fillers	4,885	$40,300	$31,900	$44,500	$30,300	$34,900	$38,200	$44,300	$53,600	HS/GED	None	Short-term OJT

RealTime Talent

Engineering, Manufacturing, and Technology

Engineering, Manufacturing, and Technology is a wide career field with the following career clusters:

- Transportation, Distribution, and Logistics
- Architecture and Construction
- Manufacturing
- Science, Technology, Engineering, and Mathematics

EMPLOYMENT FORECAST

Over the next five years, this career field's employment is forecast to decline by -0.5% on average annually, continuing the historical five-year employment decline observed since 2019 (-0.6% average annual employment decline).

5-Year Forecast for Engineering, Manufacturing, and Technology Careers, Southwest Minnesota 2024Q1
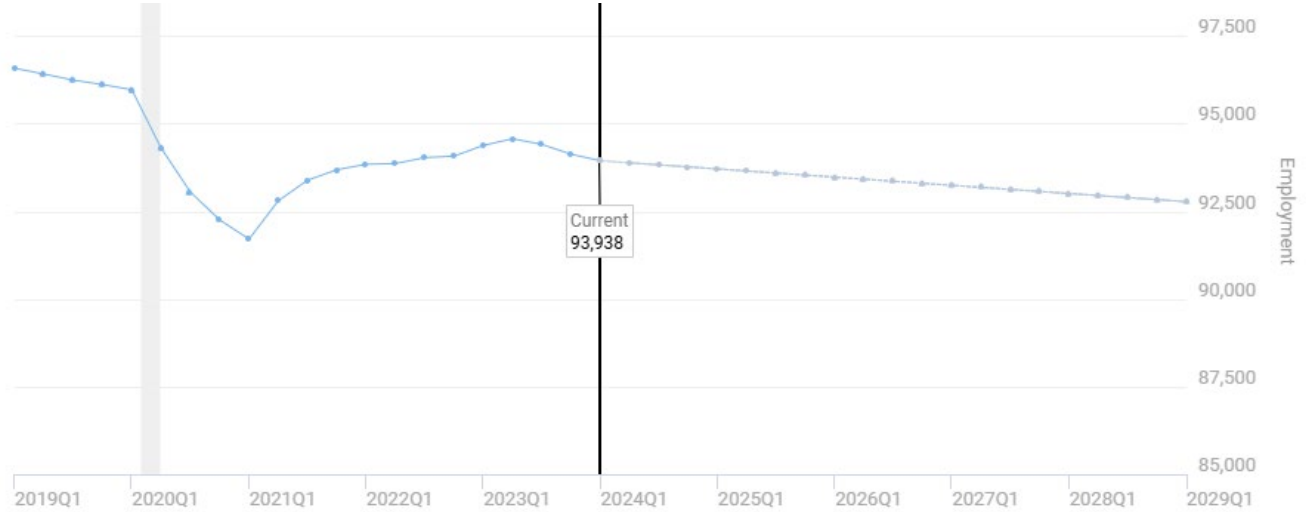
TOP OCCUPATIONS

A total of 93,938 people are employed in Engineering, Manufacturing, and Technology roles regionally, accounting for about 29% of all regional employment. The field's median wage is $55,300. All of the top ten occupations are forecast to decline, except for Light Truck Drivers.

Top Ten Engineering, Manufacturing, and Technology Occupations by Employment Volume, Southwest Minnesota, 2024Q1

6-Digit Occupation	Empl	Median Wages	LQ	Historical 5-Year Empl Change	Forecast 5-Year Demand	Forecast Annual Change
Heavy and Tractor-Trailer Truck Drivers	6,339	$56,500	1.46	-214	3,081	-0.4%
Laborers and Freight, Stock, and Material Movers, Hand	5,805	$44,500	1.01	-41	3,554	-0.4%
Team Assemblers	3,478	$41,700	1.43	158	1,652	-1.5%
Maintenance and Repair Workers, General	3,473	$52,000	1.08	-69	1,452	-0.4%
Construction Laborers	3,214	$50,200	1.12	101	1,309	-0.2%
First-Line Supervisors of Production and Operating Workers	2,334	$72,700	1.72	-9	975	-0.6%
Landscaping and Groundskeeping Workers	2,170	$40,300	0.93	0	1,343	-0.3%
Packaging and Filling Machine Operators and Tenders	2,084	$43,900	2.81	-1	1,058	-0.4%
Light Truck Drivers	2,028	$45,600	0.90	-55	1,064	0.1%
Carpenters	1,940	$59,400	1.03	-188	719	-0.6%
Engineering, Manufacturing, & Technology (CTE Field)	**93,938**	**$55,300**	**1.18**	**-2,638**	**44,338**	**-0.5%**

"Forecast 5-Year Demand" is the projected need for new entrants into an occupation over the next five years. New entrants are needed due to expected growth and to replace workers who left the occupation due to factors such as retirement or switching careers.

"Forecast Ann Change" is the expected baseline (most pessimistic) yearly change in employment due to national, long-term trend projections (per the BLS) as well as local factors such as industry mix, labor force participation rates, and population growth (as computed and modeled by RealTime Talent in JobsEQ).

TOP INDUSTRIES

Many different industries employ Engineering, Manufacturing, and Technology talent in the Southwest region. Locally, the industry with the greatest share of this field's talent is Animal Slaughtering and Processing (8.3%). Most industries employing talent in this field touch less than 3% of total talent skilled in this field, suggesting that education and training programs will need to build broad strategies that cross each of these sectors.
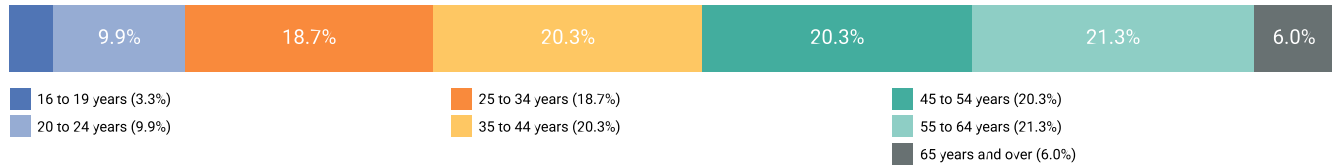
Engineering, Manufacturing, and Technology Field Employment by Industry, Southwest Minnesota, 2024Q1

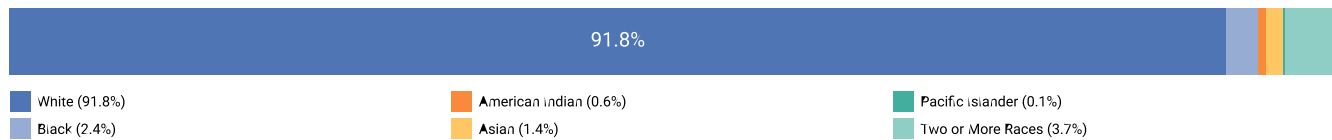| Industry Title	% of Career Field Empl	Career Field Empl	10-Year Separations	10-Year Empl Change	10-Year Total Demand
Animal Slaughtering and Processing	8.3%	7,767	8,831	-439	8,392
General Freight Trucking	3.5%	3,264	3,320	-139	3,181
Building Equipment Contractors	3.4%	3,198	2,722	-76	2,646
Executive, Legislative, and Other General Government Support	2.5%	2,347	2,184	-71	2,113
Agriculture, Construction, and Mining Machinery Manufacturing	2.5%	2,321	2,138	-144	1,993
Other Specialty Trade Contractors	2.2%	2,059	1,755	-84	1,671
Automotive Repair and Maintenance	2.1%	2,005	1,827	-97	1,730
Grain and Oilseed Milling	2.0%	1,848	1,937	-111	1,826
School and Employee Bus Transportation	1.8%	1,724	2,404	-59	2,345
Dairy Product Manufacturing	1.8%	1,704	1,968	-40	1,927
Fruit and Vegetable Preserving and Specialty Food Manufacturing	1.8%	1,704	1,957	-93	1,864
Highway, Street, and Bridge Construction	1.8%	1,666	1,380	-78	1,302
Residential Building Construction	1.8%	1,648	1,309	-61	1,248
Foundation, Structure, and Building Exterior Contractors	1.7%	1,553	1,248	-73	1,175
Plastics Product Manufacturing	1.6%	1,538	1,515	-72	1,443
Building Finishing Contractors	1.6%	1,494	1,161	-75	1,086
Services to Buildings and Dwellings	1.5%	1,400	1,644	-55	1,589
Electric Power Generation, Transmission and Distribution	1.4%	1,318	1,022	-83	939
Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	1.4%	1,310	1,257	-33	1,225
Glass and Glass Product Manufacturing	1.4%	1,284	1,263	-95	1,168
All Others	54.1%	50,786	50,390	-2,502	47,888

CAREER FIELD DEMOGRAPHICS

- The Engineering, Manufacturing, and Technology field in Southwest Minnesota is heavily male (79.3%) and white (91.8%), with an overrepresentation of Hispanic/Latine talent by about 3.1 percentage points
- Compared to the overall workforce, there is an overrepresentation of regional Engineering, Manufacturing, and Technology workers in the youngest age cohort from 16 to 19 years (by 2.4 percentage points) and in the cohorts between the ages of 35 and 64 (by 4.0 percentage points)
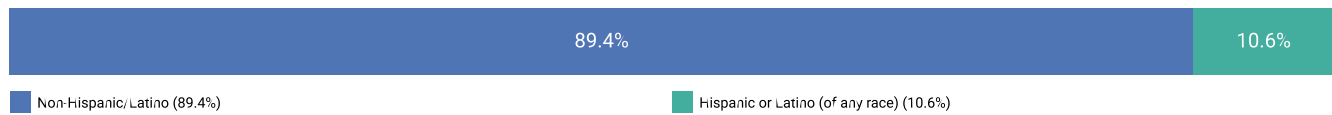
Age

	9.9%	18.7%	20.3%	20.3%	21.3%	6.0%

- 16 to 19 years (3.3%)
- 20 to 24 years (9.9%)
- 25 to 34 years (18.7%)
- 35 to 44 years (20.3%)
- 45 to 54 years (20.3%)
- 55 to 64 years (21.3%)
- 65 years and over (6.0%)

Race

91.8%		

- White (91.8%)
- Black (2.4%)
- American Indian (0.6%)
- Asian (1.4%)
- Pacific Islander (0.1%)
- Two or More Races (3.7%)

Ethnicity

89.4%	10.6%

- Non-Hispanic/Latino (89.4%)
- Hispanic or Latino (of any race) (10.6%)

Gender

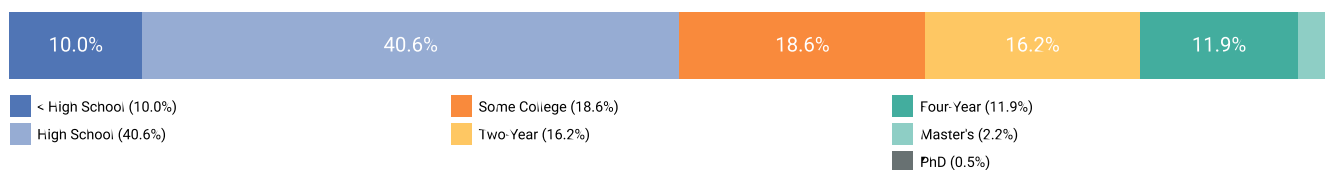| 79.3%	20.7%

- Male (79.3%)
- Female (20.7%)
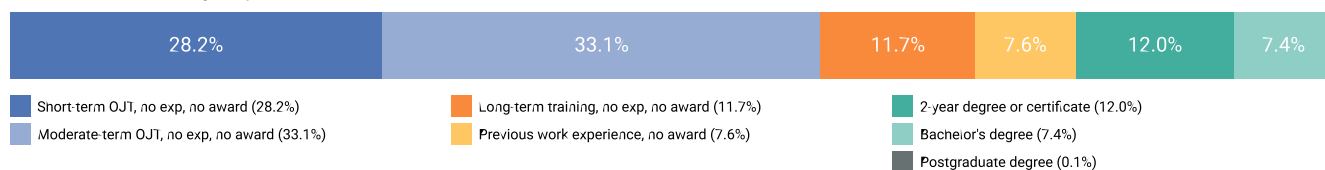
EDUCATIONAL ATTAINMENT AND REQUIREMENTS

The charts below illustrate the estimated educational attainment of current workers in this career field, followed by the typical education and training requirements in the field.

- A large majority of Southwest Minnesota Engineering, Manufacturing, and Technology roles require no more than a high school diploma and some relevant work experience, and local talent has higher levels of educational attainment than typical nationally
  - Four in five Southwest Minnesota Engineering, Manufacturing, and Technology roles (80.6%) do not require a postsecondary credential, while half (50.6%) of workers do not hold a credential beyond a high school diploma
  - A much larger share of talent holds a certificate or two-year degree (34.8%) than what is typically required by positions in this field (12.0%)

Educational Attainment

10.0%	40.6%	18.6%	16.2%	11.9%		

- < High School (10.0%)
- High School (40.6%)
- Some College (18.6%)
- Two-Year (16.2%)
- Four-Year (11.9%)
- Master's (2.2%)
- PhD (0.5%)

Education and Training Requirements

28.2%	33.1%	11.7%	7.6%	12.0%	7.4%

- Short-term OJT, no exp, no award (28.2%)
- Moderate-term OJT, no exp, no award (33.1%)
- Long-term training, no exp, no award (11.7%)
- Previous work experience, no award (7.6%)
- 2-year degree or certificate (12.0%)
- Bachelor's degree (7.4%)
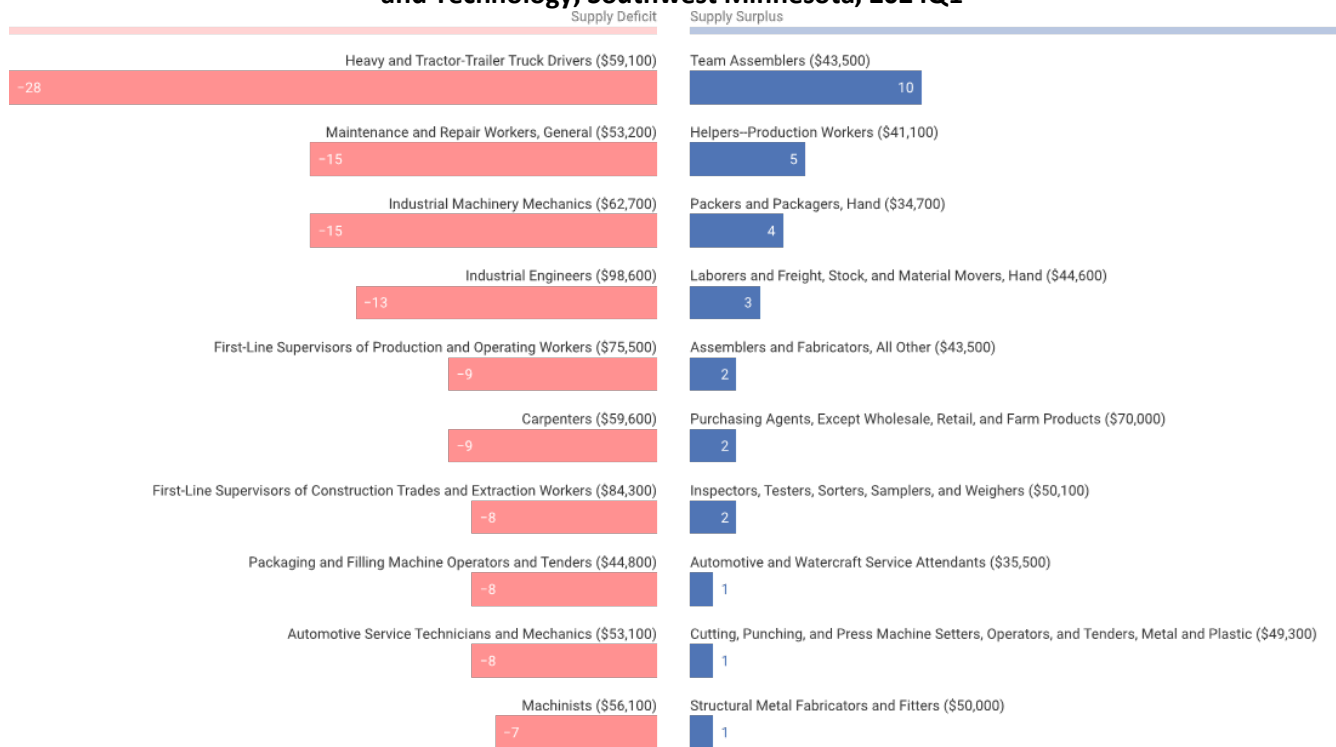- Postgraduate degree (0.1%)

OCCUPATION GAPS

The chart below shows the potential average annual talent shortages over ten years.

Several transportation and trades careers continue to signal shortages in the years ahead, with the Heavy Truck Driver talent pool likely falling short at least 28 skilled workers needed annually to meet employer demand. This talent shortage is primarily due to growth in demand and retirements which outpace the existing talent pipeline.

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Engineering, Manufacturing, and Technology, Southwest Minnesota, 2024Q1

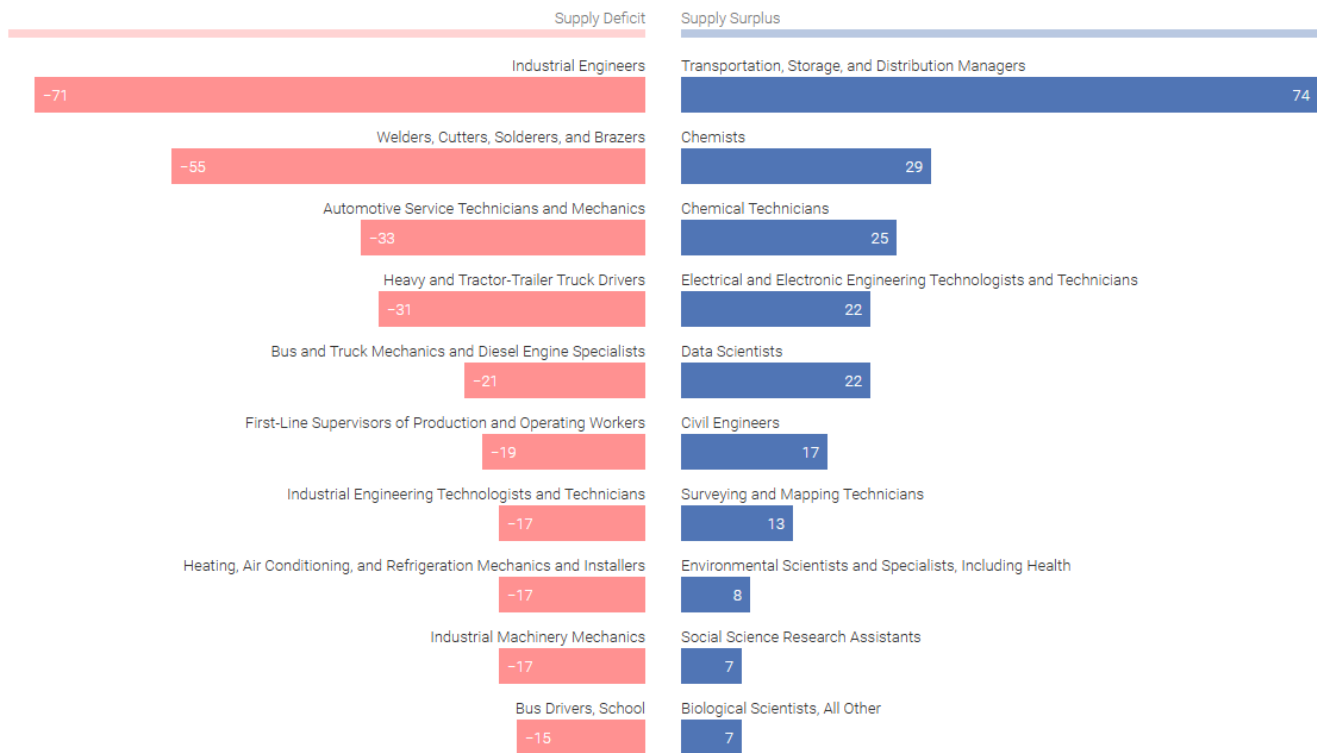| Supply Deficit		Supply Surplus	
Heavy and Tractor-Trailer Truck Drivers ($59,100)	−28	Team Assemblers ($43,500)	10
Maintenance and Repair Workers, General ($53,200)	−15	Helpers–Production Workers ($41,100)	5
Industrial Machinery Mechanics ($62,700)	−15	Packers and Packagers, Hand ($34,700)	4
Industrial Engineers ($98,600)	−13	Laborers and Freight, Stock, and Material Movers, Hand ($44,600)	3
First-Line Supervisors of Production and Operating Workers ($75,500)	−9	Assemblers and Fabricators, All Other ($43,500)	2
Carpenters ($59,600)	−9	Purchasing Agents, Except Wholesale, Retail, and Farm Products ($70,000)	2
First-Line Supervisors of Construction Trades and Extraction Workers ($84,300)	−8	Inspectors, Testers, Sorters, Samplers, and Weighers ($50,100)	2
Packaging and Filling Machine Operators and Tenders ($44,800)	−8	Automotive and Watercraft Service Attendants ($35,500)	1
Automotive Service Technicians and Mechanics ($53,100)	−8	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic ($49,300)	1
Machinists ($56,100)	−7	Structural Metal Fabricators and Fitters ($50,000)	1

AWARD GAPS

The chart below shows the shortfall of new postsecondary graduates needed to meet local demand, benchmarked against national average volumes of graduates in the 2022-23 school year.

Southwest Minnesota faces many Engineering, Manufacturing and Technology award shortages and generates a surplus of graduates in several specialized occupations:

- Postsecondary institutions based in the region continue to underproduce Industrial Engineers, Welders, Automotive Service Technicians and Mechanics, and Heavy and Tractor-Trailer Truck Drivers as compared with national volumes of new graduates for a region of equivalent size and industry mix
- Occupations in the Transportation and STEM career pathways such as Transportation, Storage, and Distribution Managers, Chemists, and Chemical Technicians all show higher awards conferred in the region than what is currently needed in the local talent market; these programs likely serve other parts of the state and the Midwest where talent demand is high but relevant programs may not exist

Award Gaps in Engineering, Manufacturing, and Technology, Southwest Minnesota, 2024Q1

Supply Deficit		Supply Surplus	
Industrial Engineers	−71	Transportation, Storage, and Distribution Managers	74
Welders, Cutters, Solderers, and Brazers	−55	Chemists	29
Automotive Service Technicians and Mechanics	−33	Chemical Technicians	25
Heavy and Tractor-Trailer Truck Drivers	−31	Electrical and Electronic Engineering Technologists and Technicians	22
Bus and Truck Mechanics and Diesel Engine Specialists	−21	Data Scientists	22
First-Line Supervisors of Production and Operating Workers	−19	Civil Engineers	17
Industrial Engineering Technologists and Technicians	−17	Surveying and Mapping Technicians	13
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	−17	Environmental Scientists and Specialists, Including Health	8
Industrial Machinery Mechanics	−17	Social Science Research Assistants	7
Bus Drivers, School	−15	Biological Scientists, All Other	7

ORIGIN, GATEWAY, AND TARGET OCCUPATIONS

This section offers an Origin-to-Gateway-to-Target model analysis for how to help move students from entry points into their field of interest into both likely and other aligned careers, considering automation, remote work, and the changing work environment.

Origin-to-Gateway-to-Target Occupations for Engineering, Manufacturing, and Technology, Southwest Minnesota, 2024Q1

Target Occupations (All HW, HS, HD, OG)
Industrial Engineers (AG)
Mechanical Engineers (AG)
Logisticians (AG)
CNC Tool Programmers
Data Scientists

Gateway Occupations
Light Truck Drivers (HD, AG)
Inspectors, Testers, Sorters, Samplers, & Weighers (AG)
Industrial Truck & Tractor Operators
Production Workers, All Other (OG)
Cutting, Punching, & Press Machine Setters, Operators, & Tenders, Machine & Plastic (AG)

Origin Occupations
Laborers & Freight, Stock & Material Movers (HD)
Team Assemblers
Landscaping & Groundskeeping Workers (AG)
Packers & Filling Machine Operators & Tenders (OG)
Slaughterers & Meat Packers

HW = High-Wage; HS=High-Skill; HD=High-Demand; OG=Occupation Gaps; AG=Award Gaps

Other Promising Occupations
A number of other Engineering, Manufacturing, and Technology occupations that are high-wage and high-demand, yet do not meet the high-skill threshold to be considered Target Occupations, may be promising careers for students to consider. These occupations may offer a fast track to good jobs for those interested in starting a career in the field without requiring a postsecondary credential. These occupations to consider include:
- Maintenance & Repair Workers, General (OG, AG)
- First-Line Supervisors of Production & Operating Workers (OG, AG)
- School Bus Drivers (AG)
- Industrial Machinery Mechanics (OG, AG)
- Bus & Truck Mechanics & Diesel Engine Specialists (OG, AG)

Featured Pathway
Careers in Industrial Engineering and related fields are highly concentrated in the Southwest region and in high demand. With a projected occupation gap and high demand, expanding opportunities for talent to enter industrial careers should be considered in the Southwest region. This Target occupation of CNC Tool Programmers is highly concentrated in the region with a location quotient of 2.69. The related Gateway occupation of Production Workers, other is also highly concentrated in the region (LQ 1.37). Several Origin occupations in the construction trades may serve as strong entry points into this pathway given the overlap in

skillsets. Team Assemblers and Laborers are both Origin occupations in high numbers in the region that could be a source for talent to grow in this pathway with additional education and training.

Origin	Gateway	Target
Laborers & Freight, Stock Movers (HD) **Team Assemblers**	**Production Workers, All Other (OG)**	**CNC Tool Programmers (HW, HS, HD, OG)**

RealTime Talent
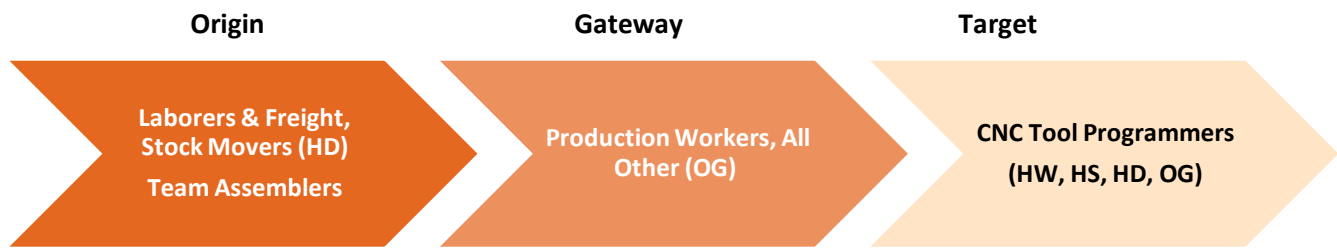
OGT Wages and Experience Level Requirements, Engineering, Manufacturing, and Technology, Southwest Minnesota, 2024Q1

	SOC	Occupation	Empl	Mean	Entry Level	Experienced	10%	25%	50% Median	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Target	17-2112	Industrial Engineers	1,601	$98,600	$71,100	$112,300	$66,000	$81,100	$94,500	$115,600	$135,500	BA	None	None
	17-2141	Mechanical Engineers	642	$91,800	$67,800	$103,900	$61,500	$78,400	$85,700	$106,400	$131,300	BA	None	None
	13-1081	Logisticians	279	$82,600	$58,500	$94,600	$55,800	$65,200	$79,600	$100,900	$111,300	BA	None	None
	51-9162	Computer Numerically Controlled Tool Programmers	153	$66,900	$51,200	$74,700	$50,300	$54,900	$67,200	$75,700	$82,400	Certificate	None	Mod-term OJT
	15-2051	Data Scientists	84	$111,400	$73,900	$130,100	$68,100	$86,600	$108,100	$134,500	$154,700	BA	None	None
Gateway	53-3033	Light Truck Drivers	2,028	$48,100	$32,700	$55,900	$30,400	$36,900	$45,600	$51,300	$75,900	HS/GED	None	Short-term OJT
	51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	1,522	$50,100	$39,100	$55,500	$37,600	$42,400	$48,800	$55,500	$64,800	HS/GED	None	Mod-term OJT
	53-7051	Industrial Truck and Tractor Operators	972	$50,100	$39,800	$55,200	$38,100	$43,400	$48,800	$57,400	$63,000	None	None	Short-term OJT
	51-9199	Production Workers, All Other	709	$46,700	$34,400	$52,800	$31,200	$39,000	$48,700	$52,000	$57,800	HS/GED	None	Mod-term OJT
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	633	$49,300	$41,900	$53,000	$40,300	$44,900	$48,200	$56,100	$59,200	HS/GED	None	Mod-term OJT
Origin	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	5,805	$44,600	$35,400	$49,100	$34,400	$38,100	$44,500	$48,800	$56,200	None	None	Short-term OJT
	51-2092	Team Assemblers	3,478	$43,500	$34,800	$47,800	$33,000	$38,100	$41,700	$48,400	$56,500	HS/GED	None	Mod-term OJT
	37-3011	Landscaping and Groundskeeping Workers	2,170	$41,500	$29,900	$47,300	$28,500	$32,700	$40,300	$47,400	$58,200	None	None	Short-term OJT
	51-9111	Packaging and Filling Machine Operators and Tenders	2,084	$44,800	$38,900	$47,800	$39,100	$39,500	$43,900	$48,200	$53,800	HS/GED	None	Mod-term OJT
	51-3023	Slaughterers and Meat Packers	1,890	$43,400	$39,500	$45,400	$39,200	$40,100	$40,700	$49,200	$51,400	None	None	Short-term OJT

Agriculture, Food, and Natural Resources

Agriculture, Food, and Natural Resources is a wide career field that includes eight career pathways:

- Food Products and Processing Systems
- Plant Systems
- Animal Systems
- Natural Resources Systems
- Agribusiness Systems
- Environmental Services Systems
- Power, Structural and Technical Systems
- Biotechnology Systems

These roles represent positions that are at least 50% or more concentrated in Agriculture, Food, and Natural Resources industries, and as such exclude some occupations that are critical to the industry but may have smaller in-industry employment numbers (such as Ag Loan Officers, Ag Financing, or some trades). This career field is the only one of the six Career and Technical Education career fields that has overlapping occupations with other fields.

EMPLOYMENT FORECAST

Over the next five years, this career field's employment is forecast to decline by about -0.8% in the Southwest region, continuing the trajectory observed in this field over the past five years.

5-Year Forecast for Agriculture, Food, and Natural Resources Careers, Southwest Minnesota, 2024Q1

TOP OCCUPATIONS

A total of 30,827 people are employed in Agriculture, Food, and Natural Resources roles regionally, accounting for about 9% of all regional employment. While most occupations are forecast to decline, Animal Caretakers are projected to grow by 0.6% annually over the next five years.

Top Ten Agriculture, Food, and Natural Resources Occupations by Employment Volume, Southwest Minnesota, 2024Q1

6-Digit Occupation	Empl	Median Wages	LQ	Historical 5-Year Empl Change	Forecast 5-Year Demand	Forecast Annual Change
Farmers, Ranchers, and Other Agricultural Managers	9,066	$76,700	6.05	-1,254	3,696	-1.5%
Farmworkers, Farm, Ranch, and Aquacultural Animals	2,695	$36,600	9.13	-48	1,696	-1.3%
Landscaping and Groundskeeping Workers	2,170	$40,300	0.93	0	1,343	-0.3%
Food Batchmakers	1,866	$35,500	5.44	172	1,357	-0.1%
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	1,808	$37,200	1.59	236	1,180	-1.0%
Meat, Poultry, and Fish Cutters and Trimmers	1,806	$41,000	6.49	-261	994	-0.4%
Plumbers, Pipefitters, and Steamfitters	896	$66,400	0.91	-53	362	-0.4%
Farm Equipment Mechanics and Service Technicians	712	$61,300	7.82	34	284	-0.1%
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	602	$67,600	0.72	43	245	-0.1%
Animal Caretakers	544	$32,400	0.80	58	516	0.6%
Agriculture, Food, and Natural Resources (CTE Field)	**30,827**	**$57,700**	**1.82**	**-1,192**	**16,191**	**-0.8%**

"Forecast 5-Year Demand" is the projected need for new entrants into an occupation over the next five years. New entrants are needed due to expected growth and to replace workers who left the occupation due to factors such as retirement or switching careers.

"Forecast Annual Change" is the expected baseline (most pessimistic) yearly change in employment due to national, long-term trend projections (per the BLS) as well as local factors such as industry mix, labor force participation rates, and population growth (as computed and modeled by RealTime Talent in JobsEQ).

TOP INDUSTRIES

The top industries employing Agriculture, Food, and Natural Resources talent in the Southwest reveal the prominence of the Animal Systems career pathway in the region. The industry with the greatest share of talent is Animal Production (19.7%). The next three most common industries employing Agriculture, Food and Natural Resources talent are Animal Slaughtering and Processing (7.7%), Hog and Pig Farming (6.9%), and Poultry and Egg Production (4.8%).

Agriculture, Food, and Natural Resources Field Employment by Industry, Southwest Minnesota, 2024Q1

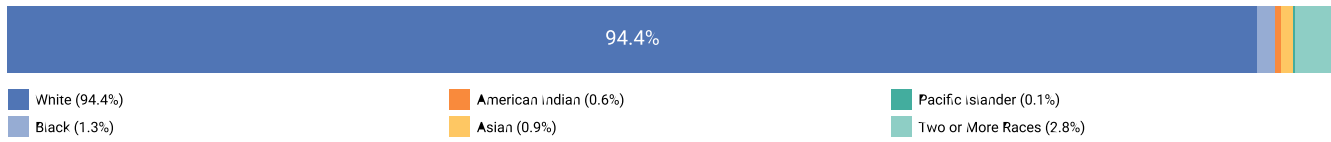| Industry Title	% of Career Field Empl	Career Field Empl	10-Year Separations	10-Year Empl Change	10-Year Total Demand
Animal Production (Proprietors)	19.7%	6,085	5,802	-976	4,826
Animal Slaughtering and Processing	7.7%	2,382	2,822	-109	2,713
Hog and Pig Farming	6.9%	2,113	2,614	-238	2,376
Poultry and Egg Production	4.8%	1,487	1,861	-136	1,725
Services to Buildings and Dwellings	4.3%	1,321	1,592	-51	1,541
Building Equipment Contractors	3.9%	1,208	1,025	-22	1,003
Crop Production (Proprietors)	3.9%	1,187	1,156	-198	958
Cattle Ranching and Farming	3.8%	1,180	1,474	-112	1,362
Oilseed and Grain Farming	2.8%	850	1,106	-40	1,066
Executive, Legislative, and Other General Government Support	2.6%	816	821	-34	786
Support Activities for Crop Production	2.6%	803	1,096	-63	1,033
Other Professional, Scientific, and Technical Services	2.5%	756	842	110	953
Electric Power Generation, Transmission and Distribution	2.1%	654	517	-40	477
Machinery, Equipment, and Supplies Merchant Wholesalers	2.0%	619	511	-9	502
Fruit and Vegetable Preserving and Specialty Food Manufacturing	1.9%	579	801	-26	776
Dairy Product Manufacturing	1.9%	579	814	-16	798
Grain and Oilseed Milling	1.4%	420	559	-22	536
Grocery and Convenience Retailers	1.3%	399	482	-34	448
Farm Product Raw Material Merchant Wholesalers	1.2%	377	489	-44	446
Support Activities for Animal Production	1.1%	341	478	-4	474
All Others	21.6%	6,670	7,787	-141	7,646

CAREER FIELD DEMOGRAPHICS

- The Agriculture, Food, and Natural Resources field remains predominantly male (70.8%), white (94.4%), and Hispanic/Latine (11.4%), all of which are overrepresented in comparison to the overall workforce demographic distribution
- Nearly double the share of workers in Agriculture, Food, and Natural Resources careers are 65 years or older (13.3%) compared to the regional workforce as a whole (7.1%)
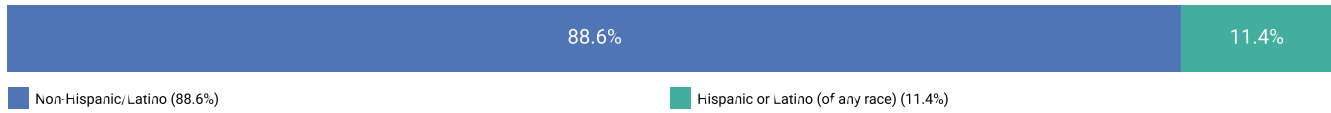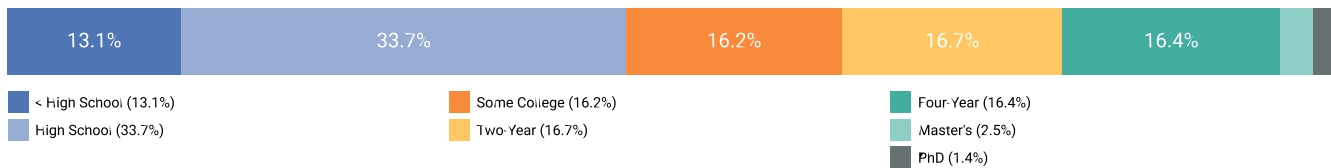
Age
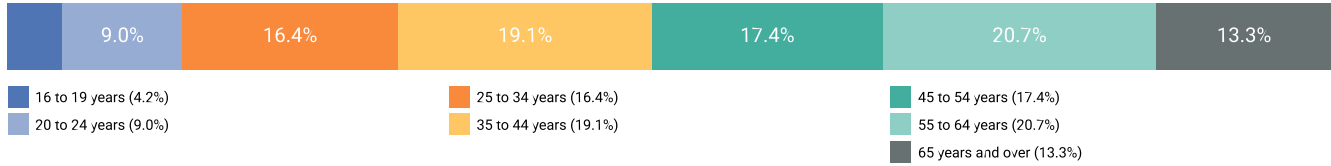
9.0%	16.4%	19.1%	17.4%	20.7%	13.3%

- 16 to 19 years (4.2%)
- 20 to 24 years (9.0%)
- 25 to 34 years (16.4%)
- 35 to 44 years (19.1%)
- 45 to 54 years (17.4%)
- 55 to 64 years (20.7%)
- 65 years and over (13.3%)

Race

94.4%		

- White (94.4%)
- Black (1.3%)
- American Indian (0.6%)
- Asian (0.9%)
- Pacific Islander (0.1%)
- Two or More Races (2.8%)

Ethnicity

88.6%	11.4%

- Non-Hispanic/Latino (88.6%)
- Hispanic or Latino (of any race) (11.4%)

Gender

70.8%	29.2%

- Male (70.8%)
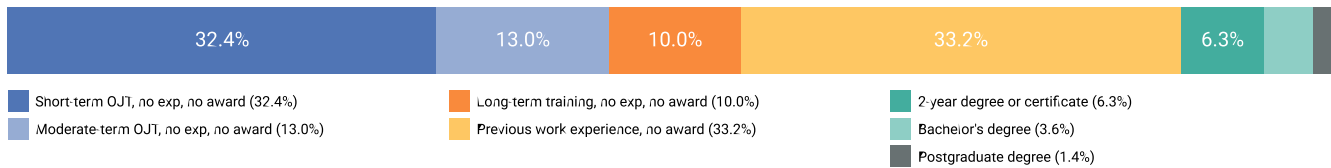- Female (29.2%)

EDUCATIONAL ATTAINMENT AND REQUIREMENTS

The charts below illustrate the estimated educational attainment of current workers in this career field, followed by the typical education and training requirements in the field.

- The Southwest Minnesota Agriculture, Food, and Natural Resources workforce has higher educational attainment on average compared to the requirements in the field, with a large share of roles requiring no more than a high school diploma and some relevant work experience
    - Just under half (46.8%) of Agriculture, Food, and Natural Resources talent working in the region hold a high school diploma at most, while nine in ten positions (88.7%) require no postsecondary education—suggesting that many of the region's talent in this field may be overqualified (underemployed) for their current role
    - Over a third (37.0%) of talent holds a two-year, four-year, or postgraduate degree, while only 11.3% of jobs require these levels of education

Educational Attainment

13.1%	33.7%	16.2%	16.7%	16.4%		

- ■ < High School (13.1%)
- ■ High School (33.7%)
- ■ Some College (16.2%)
- ■ Two-Year (16.7%)
- ■ Four-Year (16.4%)
- ■ Master's (2.5%)
- ■ PhD (1.4%)

Education and Training Requirements

32.4%	13.0%	10.0%	33.2%	6.3%		

- ■ Short-term OJT, no exp, no award (32.4%)
- ■ Moderate-term OJT, no exp, no award (13.0%)
- ■ Long-term training, no exp, no award (10.0%)
- ■ Previous work experience, no award (33.2%)
- ■ 2-year degree or certificate (6.3%)
- ■ Bachelor's degree (3.6%)
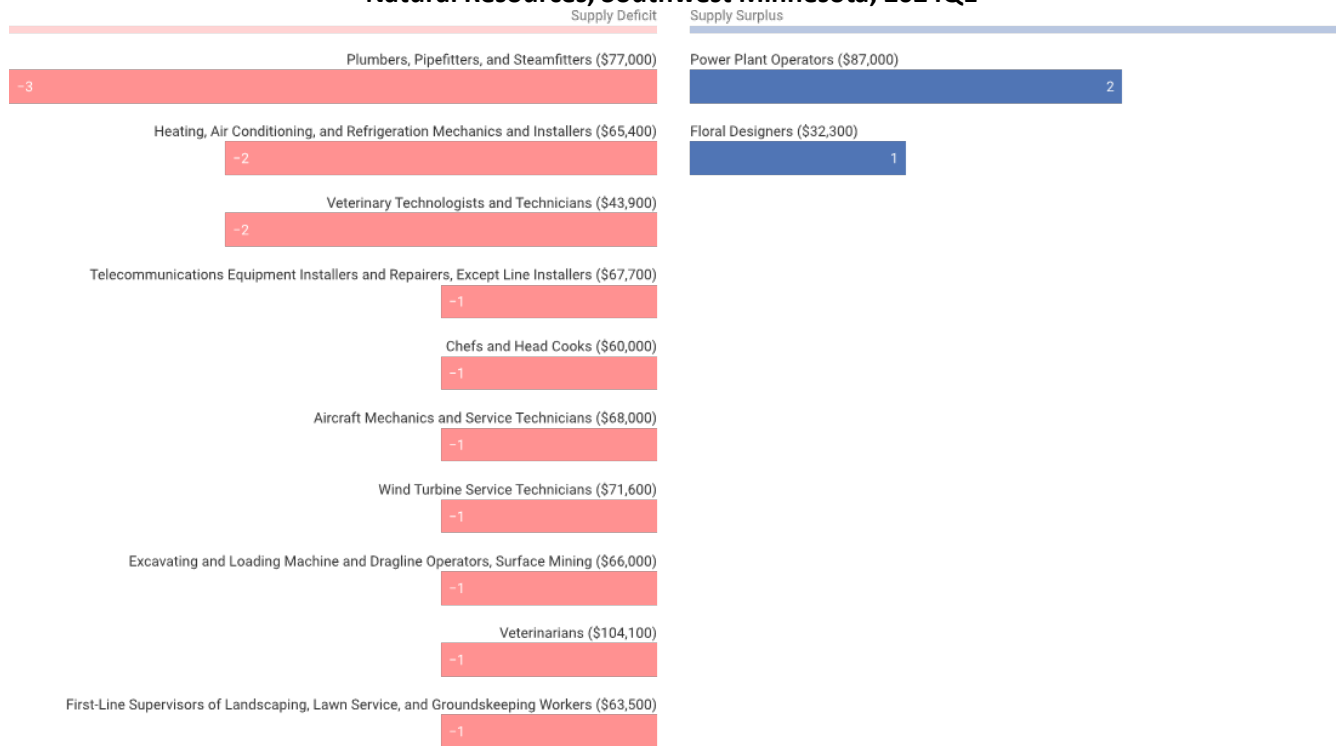- ■ Postgraduate degree (1.4%)

OCCUPATION GAPS

The chart below shows the potential average annual talent shortages over ten years.

Occupation shortage forecasts, while small, have persisted from 2022, worsening for several roles including Plumbers and Pipefitters. Only two occupations in the field still forecast small talent surpluses. Retirements and growing demand unmet by the local talent supply chain are both contributing factors. While forecasted growth remains small, there is continued demand for replacement talent to fill job openings that will be challenging to meet with the supply of local talent currently available.

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Agriculture, Food, and Natural Resources, Southwest Minnesota, 2024Q1

Supply Deficit		Supply Surplus	
Plumbers, Pipefitters, and Steamfitters ($77,000)	-3	Power Plant Operators ($87,000)	2
Heating, Air Conditioning, and Refrigeration Mechanics and Installers ($65,400)	-2	Floral Designers ($32,300)	1
Veterinary Technologists and Technicians ($43,900)	-2		
Telecommunications Equipment Installers and Repairers, Except Line Installers ($67,700)	-1		
Chefs and Head Cooks ($60,000)	-1		
Aircraft Mechanics and Service Technicians ($68,000)	-1		
Wind Turbine Service Technicians ($71,600)	-1		
Excavating and Loading Machine and Dragline Operators, Surface Mining ($66,000)	-1		
Veterinarians ($104,100)	-1		
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers ($63,500)	-1		

AWARD GAPS

The chart below shows the shortfall of new postsecondary graduates needed to meet local demand, benchmarked against national average volumes of graduates in the 2022-23 school year.

Southwest Minnesota experiences some moderate Agriculture, Food, and Natural Resources postsecondary award shortages and generates a surplus of graduates in other areas:

- Southwest Minnesota colleges and universities are underproducing at least 127 graduates annually that are needed to fill Farmer and Other Agricultural Manager positions open in the Southwest, a continued expansion of the graduate deficit from the prior year tied to an aging workforce and high demand
- HVAC Installer and Veterinarian postsecondary awards also lag national volumes, requiring employers to seek graduates completing programs outside of the region
- Several occupations, particularly technician roles, have a small surplus of postsecondary awards completed in the region, including Chemists, Chemical Technicians, Food Science Technicians, and Agricultural Technicians. Occupations with a higher relative share of postsecondary completions in the local talent market are examples of programs that serve other parts of the state or Midwest region where talent demand is high but relevant programs may not exist

Award Gaps in Agriculture, Food, and Natural Resources, Southwest Minnesota, 2024Q1

Supply Deficit		Supply Surplus	
Farmers, Ranchers, and Other Agricultural Managers	−127	Chemists	29
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	−17	Chemical Technicians	25
Veterinarians	−8	Food Science Technicians	23
Environmental Engineers	−5	Agricultural Technicians	18
Landscaping and Groundskeeping Workers	−5	Biological Science Teachers, Postsecondary	15
First-Line Supervisors of Farming, Fishing, and Forestry Workers	−4	Biological Technicians	15
Bakers	−4	Surveying and Mapping Technicians	13
Nuclear Engineers	−3	Natural Sciences Managers	11
Soil and Plant Scientists	−3	Environmental Scientists and Specialists, Including Health	8
Zoologists and Wildlife Biologists	−3	Cartographers and Photogrammetrists	4

ORIGIN, GATEWAY, AND TARGET OCCUPATIONS

This section offers an Origin-to-Gateway-to-Target model analysis for how to help move students from entry points into their field of interest into both likely and other aligned careers, considering automation, remote work, and the changing work environment.

Origin-to-Gateway-to-Target Occupations for Agriculture, Food, and Natural Resources, Southwest Minnesota, 2024Q1

Target Occupations (All HW, HS, HD)
Veterinarians (OG, AG)
Food Science Technicians
Biological Technicians
Biological Science Teachers, Postsecondary
Wind Turbine Service Technicians (OG, AG)

Gateway Occupations
Butchers & Meat Cutters (OG)
Food Cooking Machine Operators & Tenders (HD)
Pesticide Handlers, Sprayers, & Applicators, Vegetation (AG)
Graders & Sorters, Agricultural Products
Outdoor Power Equipment & Other Small Engine Mechanics

Origin Occupations
Farmworkers, Farm, Ranch, & Aquacultural Animals
Landscaping & Groundskeeping Workers (AG)
Food Batchmakers (HD, AG)
Farmworkers & Laborers, Crop, Nursery, & Greenhouse
Meat, Poultry, & Fish Cutters & Trimmers

HW = High-Wage; HS=High-Skill; HD=High-Demand; OG=Occupation Gaps; AG=Award Gaps

Other Promising Occupations

Several other Agriculture, Food, and Natural Resources occupations that are high-wage and high-demand, yet do not meet the high-skill threshold to be considered Target Occupations, may be promising careers for students to consider. These occupations may offer a fast track to good jobs for those interested in starting a career in the field without requiring a postsecondary credential. These occupations to consider include:

- Refuse & Recyclable Material Collectors
- First-Line Supervisors of Farming, Fishing, & Forestry Workers (AG)
- Chefs & Head Cooks (OG)

Featured Pathway

The Food Science pathway is a potential pathway to explore in the Southwest Region. The Target Occupation of Food Science Technician is in high demand and in very high concentration in the region (LQ 4.04). The Gateway occupation of Food Cooking Machine Operators and Tenders is also in high demand and highly concentrated in region (LQ 5.9) as is the Origin occupation of Food Batchmakers (LQ 5.44). There are also several related pathways to Food Science including Biological and Environmental Science.

Origin

Gateway

Target

Food Batchmakers (HD, AG)

Food Cooking Machine Operators & Tenders (HD)

Food Science Technicians (HW, HS, HD)

RealTime Talent

OGT Wages and Experience Level Requirements, Agriculture, Food, and Natural Resources, Southwest Minnesota, 2024Q1

	SOC	Occupation	Empl	Mean	Entry Level	Experienced	10%	25%	50% Median	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Target	29-1131	Veterinarians	197	$104,300	$79,700	$116,700	$75,400	$88,500	$102,700	$117,000	$138,400	PhD	None	None
	19-4013	Food Science Technicians	153	$53,700	$41,100	$59,900	$39,000	$45,100	$49,800	$65,500	$70,500	AS	None	Mod-term OJT
	19-4021	Biological Technicians	105	$55,000	$38,600	$63,300	$37,600	$42,100	$53,300	$62,600	$74,700	BA	None	None
	25-1042	Biological Science Teachers, Postsecondary	78	$103,500	$64,800	$122,800	$61,500	$73,800	$96,200	$122,500	$165,100	PhD	None	None
	49-9081	Wind Turbine Service Technicians	76	$71,400	$59,000	$77,600	$54,900	$65,600	$67,900	$82,100	$85,700	Certificate	None	Long-term OJT
Gateway	51-3021	Butchers and Meat Cutters	398	$45,100	$36,700	$49,300	$35,700	$39,400	$46,000	$48,300	$51,700	None	None	Long-term OJT
	51-3093	Food Cooking Machine Operators and Tenders	321	$45,400	$37,900	$49,100	$35,600	$41,800	$45,000	$50,700	$52,600	HS/GED	None	Mod-term OJT
	37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation	127	$48,400	$40,600	$52,300	$38,400	$44,600	$48,600	$53,000	$57,200	HS/GED	None	Mod-term OJT
	45-2041	Graders and Sorters, Agricultural Products	116	$45,700	$36,200	$50,400	$33,400	$41,400	$48,500	$49,800	$51,000	None	None	Short-term OJT
	49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	109	$46,200	$39,300	$49,600	$37,100	$43,100	$47,000	$49,500	$56,000	HS/GED	None	Mod-term OJT
Origin	45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	2,695	$38,400	$31,300	$41,900	$31,000	$32,600	$36,600	$46,200	$49,500	None	None	Short-term OJT
	37-3011	Landscaping and Groundskeeping Workers	2,170	$41,500	$29,900	$47,300	$28,500	$32,700	$40,300	$47,400	$58,200	None	None	Short-term OJT
	51-3092	Food Batchmakers	1,866	$38,700	$34,300	$40,900	$34,300	$34,400	$35,500	$39,800	$51,200	HS/GED	None	Mod-term OJT
	45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	1,808	$39,800	$31,500	$43,900	$30,500	$33,600	$37,200	$47,800	$51,800	None	None	Short-term OJT
	51-3022	Meat, Poultry, and Fish Cutters and Trimmers	1,806	$40,600	$31,700	$45,000	$30,700	$34,300	$41,000	$46,100	$50,000	None	None	Short-term OJT

RealTime Talent

Conclusion

Minnesota continues to experience a persistent labor shortage in critical career fields and has seen slower workforce growth in the past two years compared to other states due to retirement-related departures. Demand for talent in Architecture, Engineering, Health Science, and other Life Sciences continues to grow significantly, with the diversity of Minnesota's industries remaining one of its greatest economic strengths. Minnesota's highly-educated workforce is a critical asset for addressing future talent gaps, as many occupations forecasting shortages typically require an associate or bachelor's degree, although interest in skills-based hiring and developments in Learning and Employment Records (LERs) may shift the landscape of career opportunities rapidly for individuals with related experience and skillsets.

Employment volumes in Southwest Minnesota lag 2019 pre-pandemic volumes by only about 9,000 workers. However, despite a steady recovery for the region since 2021 and improving employment forecasts for all six career fields compared to last year's estimates, the Southwest is likely to experience an overall employment decline of about -0.5% on average annually over the next five years.

The top broad industries in the region have a mixed forecast in terms of total employment: Manufacturing (NAICS 31), Retail Trade (NAICS 44), Educational Services (NAICS 61), and Accommodation and Food Services (NAICS 72) all forecast declines in employment and significant replacement demand needs necessary to sustain business and the regional economy. Health Care and Social Assistance (NAICS 62) is the only industry in the top five by total volume of employment that is projected to show slight growth. The Manufacturing (LQ 2.25) Agriculture, Forestry, Fishing, and Hunting (LQ 4.34) and Utilities (LQ 1.38) industries are all uniquely concentrated in the Southwest region, leading to a high concentration of Engineering, Manufacturing, and Technology careers as well as Natural Resources Systems careers. Health Science Technology careers forecast the highest growth and replacement demand of any career field in this region, supporting the region's second largest industry by total employment: Healthcare and Social Assistance (NAICS 62).

FAQ

What is a location quotient?

A location quotient (LQ) is a measurement of concentration in comparison to the nation. An LQ of 1.00 indicates a region has the same concentration of an industry (or occupation) as the nation. An LQ of 2.00 would mean the region has twice the expected employment compared to the nation and an LQ of 0.50 would mean the region has half the expected employment in comparison to the nation.

What is a cluster?

A cluster is a geographic concentration of interrelated industries or occupations. If a regional cluster has a location quotient of 1.25 or greater, the region is considered to possess a competitive advantage in that cluster.

What is the CTE Career Field, Cluster, and Pathway taxonomy used in this report?

Career clusters and pathways have been identified for this report by the Source: National Career Clusters® Framework external site implemented by Department of Defense ASVAB Career Exploration Program, Advance CTE and viewable on ONET https://www.onetonline.org/find/career?c=8, updated to the 2020 SOC classification system. A summary of these six career fields and associated clusters and pathways can be found at https://www.minnstate.edu/system/cte/consortium_resources/documents/pos-career-wheel-8x11-2016.pdf. This report uses the prior Framework currently in use nationally, *not* the Modern Framework, which was released in October 2024.

What is separation demand?

Separation demand is the number of jobs required due to separations—labor force exits (including retirements) and turnover resulting from workers moving from one occupation into another. Note that separation demand does not include all turnover—it does not include when workers stay in the same occupation but switch employers. The total projected demand for an occupation is the sum of the separation demand and the growth demand (which is the increase or decrease of jobs in an occupation expected due to expansion or contraction of the overall number of jobs in that occupation).

What is the difference between industry wages and occupation wages?

Industry wages and occupation wages are estimated via separate data sets, often the time periods being reported do not align, and wages are defined slightly differently in the two systems (for example, certain bonuses are included in the industry wages but not the occupation wages). It is therefore common that estimates of the average industry wages and average occupation wages in a region do not match exactly.

What is NAICS?

The North American Industry Classification System (NAICS) is used to classify business establishments according to the type of economic activity. The NAICS Code comprises six levels, from the "all industry" level to the 6-digit level. The first two digits define the top level category, known as the "sector," which is the level examined in this report.

What is SOC?

The Standard Occupational Classification system (SOC) is used to classify workers into occupational categories. All workers are classified into one of over 804 occupations according to their occupational definition. To facilitate classification, occupations are combined to form 22 major groups, 95 minor groups, and 452 occupation groups. Each occupation group includes detailed occupations requiring similar job duties, skills, education, or experience.

What is CIP?

The Classification of Instructional Programs (CIP) is a taxonomy of academic programs developed by the US Department of Education. Colleges and universities across the country assign CIP codes to their academic programs. CIP codes are also often assigned to courses, certificates, and degrees.

Where can I learn more about the sources that were used in this report?

Lightcast offers a suite of labor market data analysis tools that are used to analyze candidate profiles and educational data from NCES IPEDS to track program graduate data and estimate talent pool availability. These tools scrape millions of candidate profiles and model skills, credentials, and employment experience to link where talent is located to where talent is in demand.

Chmura JobsEQ is a labor market data analysis tool that provides employment, unemployment, and education data from sources like the Bureau of Labor Statistics, Census Bureau, and NCES IPEDS and models this data at detailed geographic levels. This tool is utilized by RealTime Talent to model alternate forecasts impacted by COVID-19 to show possible future-state talent gaps, award gaps, and optimistic employment growth.

Who created this report?

This report was developed by RealTime Talent for Minnesota State in November 2024. If you have questions about the data found in this report, or are interested in learning more, please contact Catherine Jett at catherine@realtimetalentmn.org or visit the RealTime Talent website at www.realtimetalent.org

Data Notes

Chmura JobsEQ Source Details

- Occupation employment by default indicates employment by place of work. Occupation employment is as of 2024Q1 and based on industry employment and local staffing patterns calculated by JobsEQ and utilizing BLS OES data. Employment forecasts are by RealTime Talent using models provided by JobsEQ and are consistent with BLS national-level 10-year forecasts. Occupation wages (mean, median, and percentiles) are derived from BLS OES data as of 2023 and represent the average for all Covered Employment. Entry-level and experienced wages are derived from these source data, computed by JobsEQ.

- Industry employment is as of 2024Q1 and based upon BLS QCEW data that are imputed by JobsEQ where necessary and supplemented by additional sources including Census ZBP data.

- Education and training requirements are from the BLS. Educational attainment mix and other occupation demographics data are modeled by JobsEQ for 2024Q1 using regional occupation employment from JobsEQ, ZCTA-level demographics data from the Census Bureau, and national occupation-demographics patterns from the BLS.

- Postsecondary awards are per the NCES and for the 2022-2023 academic year. Any programs shown are linked with the occupation(s) being analyzed via the program-occupation crosswalk, which may not be comprehensive. Any programs shown reflect only data reported to the NCES; reporting is required of all Title IV schools. Training providers that do not report data to the NCES are not reflected.

- The sections on Employer Demand include Job ads data from TalentNeuron, which allows for greater specificity on education, experience level, and employer names. Since many extraneous factors can affect short-term volume of online job postings, time-series data can be volatile and should be used with caution. All ad counts represent deduplicated figures.

- Occupation gaps are modeled by JobsEQ, indicating long-term potential supply and demand mismatches in a region due, in part, to job demand and labor pool dyanamics, including educational attainment and projected growth.

- Occupation employment by place of residence is as of 2024Q1 and modeled by JobsEQ based upon occuaption employment by place of work and commuting patterns. Commuting patterns are derived from source data from the Census Bureau, occupation-specific commuting tendancies, and updated to reflect more recent population and employment estimates.

- Annual demand is the sum of the annual projected growth demand and separation demand. Separation demand is the number of jobs required due to separations—labor force exits (including retirements) and turnover resulting from workers moving from one occupation into another. Note that separation demand does not include all turnover—it does not include when workers stay in the same occupation but switch employers. Growth demand is the increase or decrease of jobs expected due to expansion or contraction of the overall number of jobs.

- Figures may not sum due to rounding.

Job Posting Source Details

- **Chmura JobsEQ:** General job ads data from the Regional Overview section of the report are based on online job posts from the Real-Time Intelligence (RTI) data set, produced by JobsEQ and gleaned from over 45,000 websites. Data reflect ads active during October 2024 and advertised for any Zip Code Tabulation Area in or intersecting with the region for which this report was produced. Historical ad volume is revised as additional data are made available and processed.

- **TalentNeuron:** Detailed job posting data insights provided in the Job Postings section of the report are aggregated using TalentNeuron (https://www.talentneuron.com/), a job posting aggregation tool which allows for greater specificity on education, experience level, and employer names. This report summarizes information from postings newly advertised between November 1, 2023, and October 31, 2024. Since many extraneous factors can affect short-term volume of online job postings, time-series data can be volatile and should be used with caution. All ad counts represent deduplicated figures.

  - Demand: TalentNeuron scrapes approximately 1.3 million job postings daily, which are cleaned, deduplicated, and aggregated on the platform daily.

  - Skills: TalentNeuron categorizes and tags skill and experience data from individual job postings for analysis at the aggregate level. The platform recognizes over 30,000 unique individual skills.

  - Salary: TalentNeuron AI algorithms scrape job postings for salaries which are added to a historical database. As not all job postings include salaries, statistical analysis is used to predict or model the likely salary offer, which is vetted against U.S. Bureau of Labor Statistics employment wage data.

Definitions and Methodology

High-Wage

High-Wage occupations are defined as occupations that have average annual wages greater than the overall regional median wage ($48,900 in the region as of 2024Q1).

High-Skill

High-Skill occupations are those that typically require a certificate or other formal credential for employment. Occupation by educational attainment are regional data modeled by JobsEQ using U.S. Census Bureau Educational Attainment data projected to 2024Q1 along with source data from the BLS.

High-Demand

High-Demand occupations are defined as occupations that fulfill two or more of the following demand criteria: 1) high growth, 2) high total demand, 3) low unemployment, 4) high unemployment-to-posting ratio, and/or 5) high posting volume.

D1: 5-Yr Growth

An occupation is considered to have high growth in that occupation has forecasted 5-year growth that is greater than the overall regional forecasted 5-year pessimistic growth model.

D2: Total Demand

An occupation is considered to have high total demand if the total 5-year forecast employment growth, transfers, and exits combined is greater than 50% of total employment in that occupation as of 2024Q1 (i.e. high long-term demand)

D3: Unempl <3%

An occupation is considered to have low unemployment if the estimated unemployment rate for the occupation is below 3% in the region as of 2024Q1 (i.e. high employer retention demand)

D4: Posting Ratio

An occupation is considered to have a strained unemployment-to-posting ratio if the estimated volume of unemployed individuals regionally exceeds the number of online job postings advertised in the month of October 2024 (i.e. ratio of unemployed-to-posts is greater than 1; low talent supply)

D5: Posting Volume

An occupation is considered to have high posting volumes if the volume of online job postings in October 2024 was greater than 200 in the region, the occupation is considered to have high job posting volumes (i.e. high immediate employer demand).

Occupation Gaps

Occupation gaps are developed by JobsEQ and use a multitude of data sources. Employment supply and demand projections are based on a starting date of 2024Q1 using baseline low-growth forecasts modeled from the Bureau of Labor Statistics (more pessimistic forecast outlook than utilized in D1 and D2). The potential supply shortfall is an underlying force that the market needs to resolve one way or another, such as by employers recruiting from further distances for these occupations, wages going up to attract more candidates, and/or increased demand and wages enticing more local residents to get training for these occupations. While this is an important analysis for determining local occupation needs, the occupation gap should be considered along with other regional data including growth and separation forecasts, unemployment rates, wage trends, and award and skill gap analyses.

Award Gaps

This metric illustrates the difference between the number of awards conferred (which are post-secondary certificates or degrees) and the occupation demand in your region. Negative values represent the gap, or shortage, of degrees being awarded in the region to meet the demand for the occupations selected. The positive values represent the surplus of awards meaning that the number of awards awarded are greater than the target range of demand for the region. Awards data are based upon degrees conferred for the academic year 2022-2023 and are provided by the National Center for Education Statistics (NCES). Occupation employment data are derived from the most recent four quarters of industry employment (from the Bureau of Labor Statistics, updated quarterly) and the industry/occupation matrix available for the region. Occupation training concentrations and shortfalls are calculated by JobsEQ. The percent college educated are provided by the BLS per the Employment Projections Program.

Location Quotient

Location quotient is a measurement of concentration in comparison to the nation. An LQ of 1.00 indicates a region has the same concentration of an industry (or occupation) as the nation. An LQ of 2.00 would mean the region has twice the expected employment compared to the nation and an LQ of 0.50 would mean the region has half the expected employment in comparison to the nation. Click here to see the formula for LQ. Occupations with a LQ greater than or equal to 1.2 have been flagged in this analysis of having a unique specialization in the region.